E-learning to Enable & Empower People with Disabilities Information & Communication Technology (ICT)

Compiled by

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Tables of Content

Sl.NO	Content	Page No
1	Foreword • Pranav Desai • Prof Sudha Rao	3-5
2	A Special comment • Dr Malathi Somaih, Former Faculty IIM-B	6
3	Why did we write this manual? ACHNOWLEDGMENT • Dr.Indumathi Rao	7-8
4	How to use ICT in Indian context? • Dr.Indumathi Rao	9-10
5	Chapter-1 Introduction to ICT	11-25
6	Chapter -2 Mobile based Learning - M-Shikshak	26-35
7	Chapter-3 ICT to improve employability of persons with disabilities	36-42
8	Chapter-4 Existing ICT accessibility devices for persons with hearing impaired and visual impaired.	43-146
9	Chapter-5 ICT Computer applications and Software for learning difficulties and dyslexia	147-177
9	Details of ICT Products for CWSN	178-184
10	Village disability registers and ID Smart cards for persons with disabilities	185-189
11	Inclusive ICT developed by CBR Network	190-192
12	References	193-194

Foreword

India has vast and well established IT sector. India also has large number of entrepreneurs who are young and educated in the US and other western countries, exposed with latest ICT solutions.

Institutions like NASSCOM can promote such initiatives and CSR resources of their member IT companies can support the budding entrepreneurs who can drive innovation, develop mobile apps in local languages, create tools, design devices (may be with technology collaboration) and take to market, which is large and growing. Such Indigenous Assistive technology can meet the needs of persons with disabilities /Senior citizens in Asia and other countries.

Pranav Desai,
Founder of voice of SAP.com,
IT Business leader, USA

Foreword

ICT can open new opportunities for specially abled persons in India.

More than a billion people live with some form of disability, and 80% of them live in developing countries. Disability is both a cause and a consequence of poverty: poor people are more likely to become disabled, and people with disabilities are among the poorest and most vulnerable groups of the global population.

India's disabled population has increased by 22.4% between 2001 and 2011. The number of disabled, which was 2.19 crore in 2001, rose in 2011 to 2.68 crore—1.5 crore males and 1.18 crore females.

The Convention on the Rights of Persons with Disabilities, which entered into force in 2008, constitutes a commitment of the international community to the inclusion of the disability perspective and persons with disabilities in all aspects of development.

The ICT Opportunity for a Disability-Inclusive Development contributes to a better understanding of the extent to which information and communication technologies (ICTs) enable and accelerate the educational. Social and economic inclusion of persons with disabilities.

There exist many challenges that are still to be addressed in India in using ICT effectively in the education sector. It is necessary all initiatives concerning ICT in education must also include the needs and concerns of specially abled learners in the schools, colleges and universities. The role of ICT in open school system and open universities needs further research and development, as a majority of children with severe special needs in rural areas have no access to education.

India with its vast IT sector must capture global opportunities by investing in research and development on ICT for specially abled persons to meet their diverse needs.

We also need to give special attention to understand the ICT needs of persons with disabilities living in rural, tribal, hilly areas. This needs a network and partnership between universities, IT companies, educationists, NGOs and persons with special needs.

ICT is not about supplying the equipment to schools and colleges. Unless we train our teachers to make optimum use of ICT in teaching and learning process mere ICT equipment cannot change the quality of education.

Our vision must be on inclusive development and a society in which persons with disabilities, as both agents and beneficiaries of development efforts, can maximize the use of ICTs to fully access healthcare services, benefit at all educational levels, be competitive in the labor market, participate in public life and live independently.

I congratulate CBR NETWORK for compiling this manual, which gives information on existing global technologies, ICT developed in India.

The manual has a potential to give ideas to IT companies, engineering colleges, IITs to develop new ICT to meet the needs of persons with disabilities in India as well as at global level.

Let us join hands to working together towards the achievement of this vision.

Prof Sudha Rao
Former Vice Chancellor
Karnataka State Open University

Why do we need ICT for persons with Disabilities in India?

ICT revolution in all spheres of life from education to health sectors is seen in the world. We need to develop ICT applications relevant to Indian diverse socio-geographic-economic conditions especially to ensure persons with disabilities in rural /tribal and remote hilly areas get the benefits of ICT. We need hard ware and software ICT applications to meet the real needs of persons with disabilities in India.

Though we see a huge flood of hardware for ICT applications (Tablets, Smart phones, computers, remote sensing sensors etc.) we see a large shortage in the software applications relevant to Indian education system, work empowerment culture, Language and social practices.

It is high time we focus on this issue and use ICT tool effectively to find solutions to local problems such as lack of schools, trained teachers to meet the diverse needs, easy communication in Indian languages including sign language, barrier free mobility etc. in rural and urban India.

India with its strong IT industry can develop software applications for persons with disabilities to use for education, Health, skill development, employment, communication, mobility, simple problem solving applications etc. India has potential to reach the global users too by developing country specific software tools and applications.

The challenge in India in scaling up ICT in education is to train teachers at pre-services and in-service level. The later needs change in attitudes of teacher to accept and use ICT as supportive system and not as a threat to their position. ICT application in Indian languages appropriate to our context would increase the acceptance of teachers to use ICT in education

Of course there are three key questions to be addressed in ICT for persons with disabilities. They are:

1. How much inclusive and exclusive ICT we need to develop?
2. What is the role of IT sector, universities, IITs, NGOs?
3. Who will fund the research?
4. How to scale up production from prototype to open markets?

In India we need ICTs to support (to reach every person living including those who live in remote areas) for the implementation of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006), specifically:
Article 6 - Women with disabilities
Article 7 - Children with disabilities
Article 9: Accessibility
Article 24: Inclusive Education.
Article 19 - Living independently and being included in the community
Article 21 - Freedom of expression and opinion, and access to information
Article 27 - Work and employment
Article 28 - Adequate standard of living and social protection
Article 31 - Statistics and data collection
In this manual we explain for the beginners how Existing and new ICT can make a difference to quality of life in rural and urban areas in India.

By,
Dr Malathi Somaih
Former Faculty IIM-B

Why did we write this manual?

ACHNOWLEDGMENT

ICT revolution has entered every sphere in Indian development sector.

The IT sector is growing in India and we have vast number of excellent engineering colleges in states like Karnataka, Tamil Nadu and Andhra Pradesh who can play a pioneering role in developing ICT relevant to Indian needs in disability sector. Of course we have potential to meet the global needs as well.

In 2010 I was in a village and was looking for a particular address. There I saw a young man working in his farm who helped me finding the address. When I said I have to go to this village to understand the needs of children with disabilities he said he has a sister who cannot hear. I asked him to note down my phone number and to come along with his sister next week to our weekly free guidance center. I was looking for a piece of paper to write down my name, address and phone number. He said "Madam there is no need for paper I will note down in my cell phone and will give a missed call now for you to save my number". I was surprised to see his level of "Cell phone literacy". We developed E learning digital materials for Community Based rehabilitation and inclusive education in 2002.There were 54 DVD resource kit had every information on all aspects of disabilities on virtual platform. The excitement of seeing CBR resource kit an outcome of ten long years of hard work soon punctured as we keep on hearing from student from rural areas "Madam we do not need this resource kit. Just give un printed books"! Of course southern India with its rapid IT development was able to create awareness on using E learning in education. Many students from south appreciated the rich treasure of knowledge and information that was provided to each student. But I could see the digital divide.

We realized unless we develop E learning, M- Learning in Indian languages, relevant to Indian context the acceptance from rural learner would remain a distant goal to achieve. This has resulted in M-Shikshak project, E learning in Indian languages, Indian languages blog, Village disability registers with OMR and smart cards.

At the global level ICT has made huge revolution in disability sector. We see exclusive technologies and inclusive technologies used by people with disabilities. From Early identification to university level education we see ICT being applied to improve the quality of life.

We have developed this manual for beginners the diverse ICT applications for the use of persons with disabilities available in different countries. We also present E learning and M learning solutions to reach the unreached children with special needs in rural, tribal, hilly areas with access to health, Education, Tele rehabilitation (Trinetra Tele rehab is developed by CBR NETWORK which has a network in the south Asian countries).

We hope this would inspire of engineers, researcher, and business entrepreneurs to develop ICT for persons with disabilities in India and for global applications.

We are thankful to Internet sources in the preparation of this manual. If we have left any technology or research in this area please send us E-mail (ideasinetwork2013@gmail.com). We shall include them in the next edition.

We are Thankful to Dr Malathi Somaih, Prof.Sudha Rao, Shri. Pranav Desai, Kum.Ashwini Sathnur and each one of them for their contribution in this book and valuable inputs.

My heartfelt thanks to Kum.Deepashree.H.R and CBR staffs for their cooperation in preparing this book.

Dr Indumathi Rao
Regional Adviser
CBR Network

How to use ICT in Indian context?

In India we have access to global ICT in education, rehabilitation, inclusion in employment/work place technologies.

There are three types of ICT knowledge available. They are:

1. ICT that are developed for other users but is also relevant to Indian needs and could be used without much adaptation except translations into Indian languages.
2. ICT that gives us ideas for Indian companies to develop similar technologies for use in Indian context especially in rural areas.
3. ICT which are not relevant to Indian context

ICT is not same as assistive devices. ICT essentially is computer based digital applications, which is easy to use by people with disabilities meeting diverse needs.

For example a Smart board in classrooms can change the quality of learning provided a teacher knows to use the computer, Internet and curricular goals and outcomes. Mere supply of Smart boards /smart phones/tablets/computer cannot change the quality unless there is an intelligent human facilitation to kindle curiosity. Eagerness to learn and relevant knowledge sharing using ICT.

When used appropriately, ICTs—especially computers and Internet technologies— enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. These new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy—in its worst form characterized by memorization and rote learning—to one that is learner-centered. (See Table 2 for a comparison of a traditional pedagogy and an emerging pedagogy enabled by ICTs.)

- Active learning. ICT-enhanced learning mobilizes tools for examination, calculation and analysis of information, thus providing a platform for student inquiry, analysis and construction of new information. Learners therefore learn as they do and, whenever appropriate, work on real-life problems in-depth, making learning less abstract and more relevant to the learner's life situation. In this way, and in contrast to memorization-based or rote learning, ICT-enhanced learning promotes increased learner engagement. ICT-enhanced learning is also "just-in-time" learning in which learners can choose what to learn when they need to learn it.
- Collaborative learning. ICT-supported learning encourages interaction and cooperation among students, teachers, and experts regardless of where they are. Apart from modeling real-world interactions, ICT-supported learning provides learners the opportunity to work with people from different cultures, thereby helping to enhance learners' teaming and communicative skills as well as their global awareness. It models learning done throughout the learner's lifetime by expanding the learning space to include not just peers but also mentors and experts from different fields.

- Creative Learning. ICT-supported learning promotes the manipulation of existing information and the creation of real-world products rather than the regurgitation of received information.
- Integrative learning. ICT-enhanced learning promotes a thematic, integrative approach to teaching and learning. This approach eliminates the artificial separation between the different disciplines and between theory and practice that characterizes the traditional classroom approach.
- Evaluative learning. ICT-enhanced learning is student-directed and diagnostic. Unlike static, text- or print-based educational technologies, ICT-enhanced learning recognizes that there are many different learning pathways and many different articulations of knowledge. ICTs allow learners to explore and discover rather than merely listen and remember.

Table 1. Overview of Pedagogy in the Industrial versus the Information Society

Aspect	Less ('traditional pedagogy')	More ('emerging pedagogy' for the information society)
Active	• Activities prescribed by teacher • Whole class instruction • Little variation in activities • Pace determined by the programme	• Activities determined by learners • Small groups • Many different activities • Pace determined by learners
Collaborative	• Individual • Homogenous groups • Everyone for him/herself	• Working in teams • Heterogeneous groups • Supporting each other
Creative	• Reproductive learning • Apply known solutions to problems	• Productive learning • Find new solutions to problems
Integrative	• No link between theory and practice • Separate subjects • Discipline-based • Individual teachers	• Integrating theory and practice • Relations between subjects • Thematic • Teams of teachers
Evaluative	• Teacher-directed • Summative	• Student-directed • Diagnostic

Source: This, A., et al. Learning Through the Web. http://www.decidenet.nl/Publications/Web_Based_Learning.pdf. Accessed 21 May 2002. New link - http://www.decidenet.nl/apps/documenten/ download/almekinders1.pdf

By,
Dr Indumathi Rao
Regional Adviser

CHAPTER-1 –ICT AN INTRODUCTION

People with disabilities, around 1 billion in numbers around the world are a significant percentage of the world's population. Unfortunately, many of them are not provided with equal opportunities in education as their peers and are denied their rights of being an integral part of the learning community. It is the responsibility of all Member States to achieve social justice through the protection of the equal rights of their citizens, including persons with disabilities, to education, science, culture, communication and information using various technological solutions. Within this context, the role of ICT to foster inclusive education for learners with disabilities and improve their quality of life has been globally recognized. (ICT Policy guidelines, UNESCO, 2014).

Persons with disabilities are still facing challenges in all walks of life. Right from access to transportation, education, employment, to independent living and performing routine tasks like shopping, watching a movie or accessing an ATM. Assistive technology can help remove the barriers. ICT is a vast areas which comprises of software to hardware solutions to enhance the quality of life of persons with disabilities to improve the functional ability of an individual with special /diverse needs. . We see tremendous development in ICT since two decades at global level and these applications are available for individual use and classroom applications/work stations etc. There is ICT developed exclusively for people with special needs and there is also ICT, which is developed for "all users" which is also used by people with disabilities successfully – Electronic note takers, Mobile phones with audio control, Speech to text software, smart boards, Mobile learning packages, and text size options are some of the examples.

Assistive Technology (AT) both software and hard ware technology helps people with disabilities and special needs to overcome the additional challenges they face in communication, mobility, daily living

activities, skills development etc. For example, switch-operated software, onscreen keyboards, canes with sensors and mouse alternatives are different types of assistive technologies.

Technology lies at the heart of most aspects of inclusive development and the fulfillment of rights for persons with disabilities. Without technology, basic rights such as access to education and employment and participation in social, cultural and political aspects of society cannot be realized for persons with disabilities. The current draft of the Sustainable Development Goals (SDGs) provides special attention to persons with disabilities in a number of areas[1]and includes references to technology and access to the benefits of technologies throughout as a mechanism for the achievement of the post-2015 goals and targets. (ICT conference 2014 –UN DESA concept note)

In India, a majority of children with disabilities are enrolled in schools as a part of compulsory enrolment policy and Right to Education Act. There are six key challenges we need to address in India especially in rural/tribal areas. They are:

1. How do we use ICT to include those children with diverse needs who are not yet included in the education system?
2. How do we use ICT to scale up educational access to children who live in rural /tribal areas who cannot attend school regularly due to lack of accessibility to schools?
3. How do we use ICT to enhance the quality of learning in inclusive schools/open school system and other educational systems?
4. Whether our teachers in general education system are trained in the use of ICT for its effective implementation?
5. Do we have appropriate ICT technology relevant to Indian socio-cultural-economic conditions taking the countries diversity (different languages, diverse curriculum, different teacher training programmes, diverse terrain etc.)
6. Last but nevertheless least how do we use ICT for mandatory screening, registration and assessment of children with diverse needs without labeling them based on the type or intensity of disability?

The above challenges can be addressed if we take into account that India is a major knowledge society and has the major share in the development of IT sector especially in the development of software solutions for computers as well as mobile applications. The 2014 expedition to Mars shows we have fantastic indigenous technologies and potential to develop such technologies in all sectors, which includes the education, health and rehabilitation sectors.

ICT can end discrimination in schools

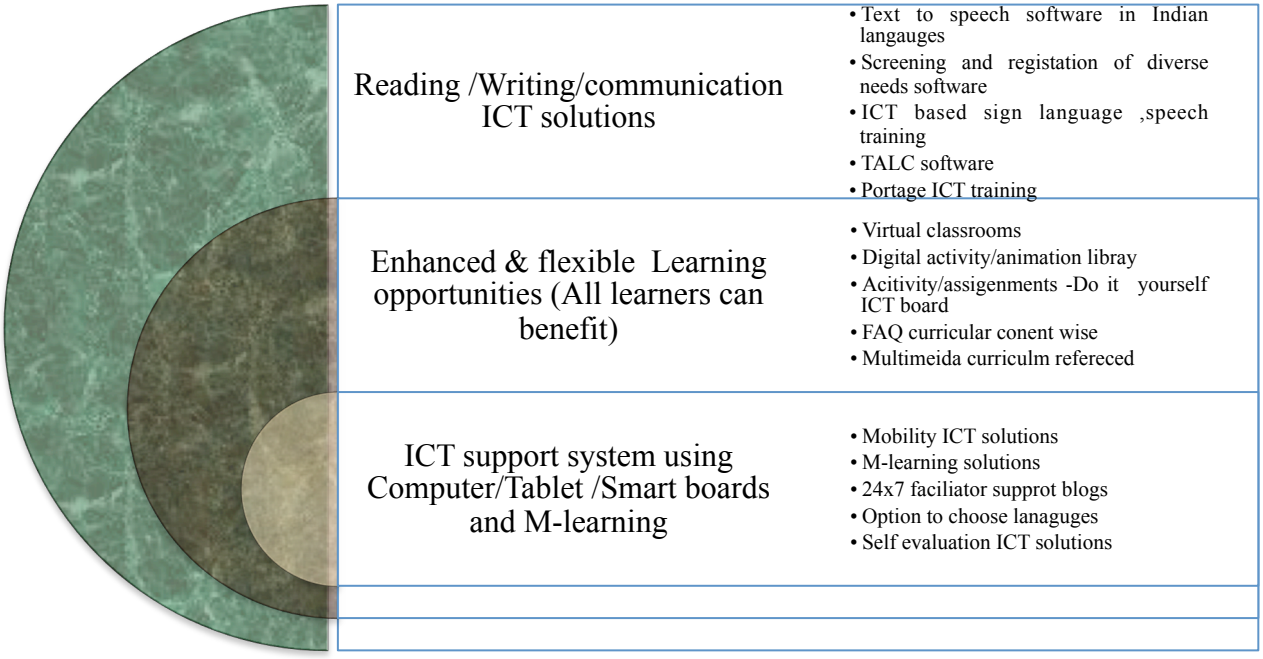
ICT can eradicate discrimination in the schools as appropriate ICT inclusive technologies can help all learners to learn and have unique pace and approach to learning. This realization in turn changes the way we see “individual differences” among “diverse learners”. As diversity and unique needs are seen as “normal’ in place of the existing viewing them as “Special needs”.

We can foresee common learning environments meeting the individual needs in schools replacing the current system of norm referenced /target driven approaches in the school system. ICT can become a bridge to cement the gaps in learning and attitude towards individual needs of learners. ICT has potential to recognize the uniqueness of a learner both in terms of pace and method of learning. However for this

happen in a schools in rural /tribal and remote areas there is a need for well-planned ICT strategy, which is appropriate to Indian diverse socio-cultural-economic conditions.

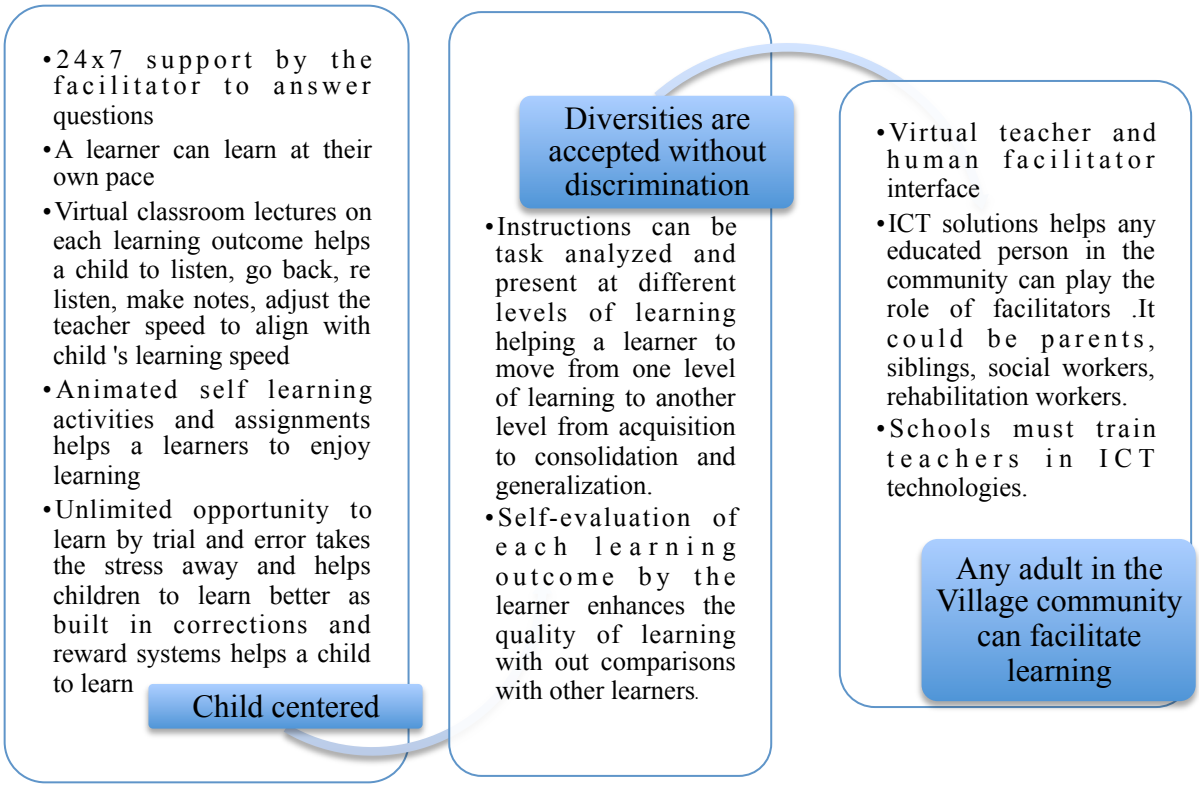
- Let us see in a diagram how ICT can help children with special needs to learn without barriers.

ICTs to support the implementation of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006), specifically:
Article 9: Accessibility; ⎯ Article 21: Freedom of Expression and Opinion, and Access to Information; ⎯ Article 24: Inclusive Education.
Global ICT Policy guidelines-UNESCO 2014



➢ Diagram-1-ICT enabled learning –Multi-dimensions

The above diagram (Diagram -1) illustrates how a learner can move on the path of self learning mode with the support of ICT which would give 24x7 support with flexibility to learn at their own pace in their own communities .Let us see advantages of ICT based learning with a specific reference to children with special needs. (Most of the concepts stated in this paper are applicable to all learners).



➢ Diagram-2-ICT enabled learning

SUCCESS STORY OF AMOG INAMDAR

I wish to share the story of Amog Inamdar from Bangalore. Amog invited some of us for dinner to share his joy in 2013. When I asked the cause for celebration his proud parents said he has scored 99% in pre university examination.

I was so happy and congratulated him on this spectacular achievement. I am sure the entire nation would congratulate him if they know that Amog was born deaf person.

When he had his first cochlear implant while he was in 11th standard and he got it done before Diwali. When i asked him how is doing he said "i heard Pataki cracker sound for the first time in my life "his eyes were beaming with joy.

He recited a poetry he wrote about our prime minister Modi ji and many learning theories i had in head started dancing turning somersaults as none of these theory were close to the reality what i was actually seeing.

His mother said, "We met many professionals and they all said not underestimate his potential to learn. As parents we had immense confidence in his potential. I must say he had so much of faith and confidence in his potential. By gods grace and well wishes he is able to achieve this due to his own efforts and support of his teachers.

Amog had a wide exposure to Internet, computers and he was on full swing on a self-learning mode. Of course teachers in schools, teachers in private tuition classes, parents all played an effective supportive role. Computers and Internet access with software with accessible format is to enhance learning is a boon to learners with special needs.

We are aware a majority of children with special needs in India are not as fortunate as Amog. If they also get opportunities to learn like Amog they will also shine like him leading to India, which shines where in everyone partake in the national development.

➢ India is an emerging knowledge society

India is an emerging knowledge society. In knowledge society we need to ensure every child with special diverse need has access to education from pre-primary to higher education.

A learner in the 21st century is not depended only on teachers to acquire knowledge and information. They are acquiring knowledge from diverse sources; computers, mobile phone, television, radio, newspapers, magazines and a vibrant society around them are the man sources of knowledge building.

- **However a Learner with Special /Diverse needs has no access to ICT.**

Table 1-Disability Data as per 2011 census in India				
Age Group	**Population**	**Disabled persons**	**Percentage**	**Number of leaners who would benefit from ICT access in education**
0-4	112806778	1,291,332	1.144729087	
5-9	126928126	1,955,539	1.540666408	
10-19	253235661	4,616,050	1.822827789	
		78,62,921		78,62,921
20-29	212838187	4,189,839	1.968556047	419839

- **Scope of ICT**

The scope of ICT is vast. ICT enabled learning system has many dimensions. These dimensions are explain in Table-2.The Table covers only a part of ICT dimensions as from movie ticket booking to train travel, information to farmer on agriculture to job placements is based on ICT in India. Therefore one may argue unless we enable people with disabilities ICT savvy the concept inclusive society may remain a dream.

Table-2-Scope of ICT in India				
ICT for parents	ICT for Self-learning (Core curricular areas, plus curricular areas and open curricular areas).	ICT for teacher capacity building	ICT to overcome barriers in conventional learning environments	ICT for enhanced learning experiences in the form of digital libraries, talking and interactive books, games etc.
ITC for enhancing language and communication	ITC for Mobility	ICT for enhancing life skills/Daily living etc.	Virtual classroom	M-Learning
ICT of early identification and intervention	ICT for behavior management	ICT based jobs	ICT based skill training	ICT based assistive technology
ICT based School Disability Registers with screening and	ICT based assessment	ICT based ID cards and registration of people with	Tele Medicine and Tele rehabilitation	ICT and cloud technology

assessment with smart cards		disabilities		
ICT for Community Based rehabilitation	ICT for assistive device training	ICT for production of assistive technology	ICT for Smart boards in schools	ICT for TV schools
ICT for higher education	ICT for capacity building and productivity in work place	ICT for counseling and guidance to families and members with disabilities	ICT for panchayth sensitization on disabilities issues	ICT for media management on disability issues

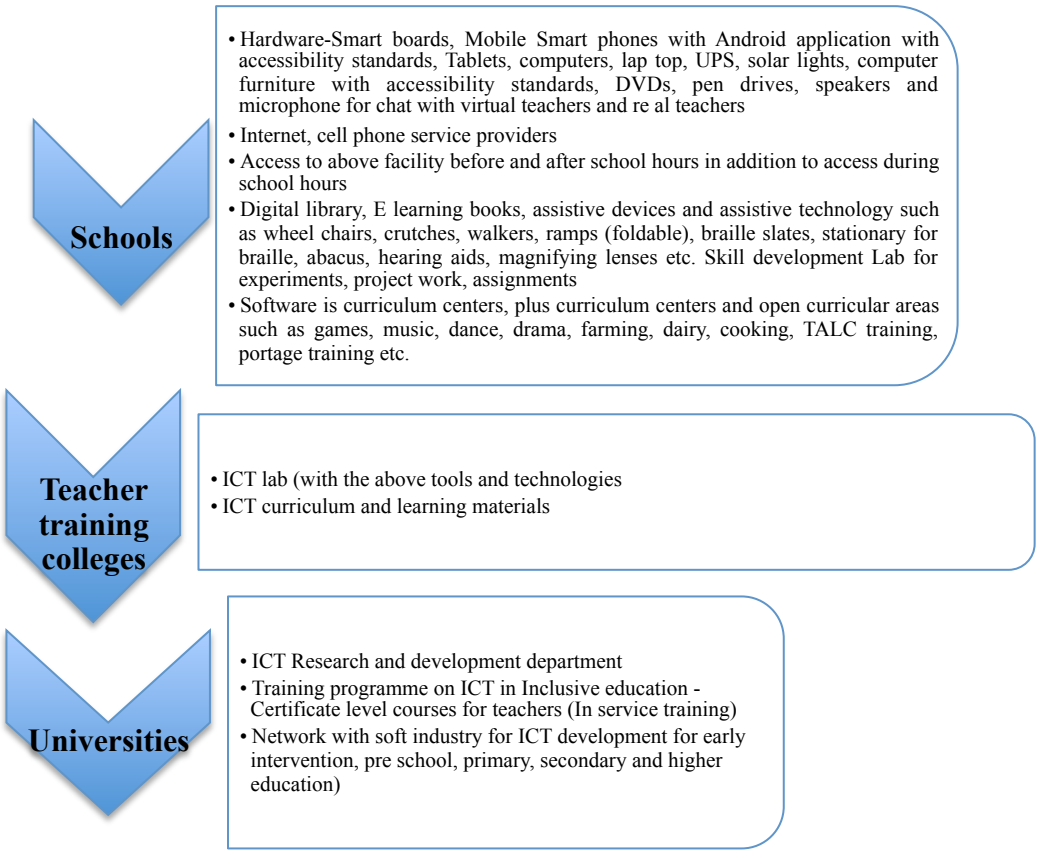
The above table (Table-2) shows ICT is a tool that could be used effectively to find solutions to many challenges from early intervention to capacity building and productivity of people with disabilities.

In a report undertaken by the Joan Ganz Cooney Center at Sesame Workshop, draws on interviews with a cross-section of research, policy, and industry experts to illustrate how mobile technologies such as cell phones, iPod devices, and portable gaming platforms might be more widely used for learning in future.

More than half of the world's population now owns a cell phone and children under 12 constitute one of the fastest growing segments of mobile technology users in the U.S. In India a conservative estimate says nearly 70% of our people have a mobile phone. They are now using mobile phones for communication and entertainment. If we use the mobile technology for education we can make quantum jump in scaling the educational access and quality enhanced learning. If we can give a smart phone with android application to all children /learners with special needs and support with M- Learning application (For example M-Shikshak programme of CBR network available) we can reach a majority of children with special needs within a span of one year! That is the power of ICT, large-scale expansion is possible only by use of ICT and India needs ICT to reach every child with a special need. ICT can use computers, Internet, tablets, smart boards, mobile phones, Radios for scaling up educational access. In India we have vast experience of NGOs in using diverse platforms in reaching the unreached, in quality enhancement in learning and similar applications.

➢ ICT systems requirement

ICT enabled learning need the following inputs in our schools/teacher training colleges /universities.



➢ Diagram-3-ICT enabled education

A research study in U.S. examined over 25 handheld learning products and research projects in the U.S. and abroad, the report highlights early evidence and examples of how mobile devices may help re-define teaching and learning in the decade ahead.

➢ MAPPING EXISTING ICT RESOURCES

Many organizations have developed ICT solutions in the area of education. Inclusive education, community based rehabilitation, portage early childhood inclusion, village disability registrations, school disability registers, Trinetra screening software's etc.

There are also global technologies available in special needs, which could be adapted to Indian conditions.

For example braille learning software's, sign language learning software's, learning software's for children with profound brain damage are available.

> Just as *Sesame Street in USA* helped transform television into a revolutionary tool for learning among young children four decades ago, advances in mobile technologies are showing enormous untapped educational potential for today's generation.

➢ There is a need to develop the following software solutions in Indian languages:

1. Screening
2. Assessment
3. Digital registration and smart cards
4. Virtual classrooms lectures, digital activity learning, fax and multimedia related general curricular areas in different Indian languages
5. Virtual classrooms lectures, digital activity learning, fax and multimedia in plus curricular areas such as sign gauge, speech training, behavior modification skills, talc, portage etc.
6. ICT for open curricular areas such as sports, music, dance drama etc. to enhance the quality of learning
7. ICT training for teachers
8. ICT training for parents
9. ICT training for CBR personnel
10. ICT training for educated volunteers in the community

➢ Key opportunities in ICT based learning

Five opportunities to seize ICT based learning's unique attributes to improve education:

1. Encourage "anywhere, anytime" learning

ICT allow students to gather, access, and process information outside the classroom. They can encourage learning in a real-world context, and help bridge school, afterschool, and home environments.

2. **Reach the unreached children**

Because of their relatively low cost and accessibility in low-income communities, handheld devices/tablets /low cost computers can help advance digital equity, reaching and inspiring populations "at the edges" — children from economically disadvantaged communities and those from developing countries.

3. **Improve 21st-century social interactions**

ICT technologies have the power to promote and foster collaboration and communication, which are deemed essential for 21st-century success.

4. **Fit with learning environments –Simple**

ICT devices can help overcome many of the challenges associated with larger technologies, as they fit more naturally within various learning environments.

5. **Enable a personalized learning experience**

Not all children are alike; instruction should be adaptable to individual and diverse learners. There are significant opportunities for genuinely supporting differentiated, autonomous, and individualized learning through ICT devices.

➢ Key challenges in ICT based learning

A number of critical challenges must be addressed to unleash the educational potential of ICT technologies. Five key challenges outlined in the report include:

1. **Negative aspects of ICT based learning**

2. **We are listing these issues to ensure ICT interface in education is planned carefully to prevent the negative aspects.**

Cognitive, social, and physical challenges must be surmounted when ICT devices are incorporated into children's learning. Disadvantages include: the potential for distraction or unethical behavior; physical health concerns, sedentary life style, lack of real applications replaced by virtual learning and data privacy issues.

3. **Cultural norms and attitudes**

Though many experts believe that ICT devices have significant potential to transform children's learning, parents and teachers may not be convinced. In rural /tribal areas the use of ICT by children may also pose cultural challenges unless the ICT is built on local cultural strengthens and indigenous technologies in which local cultures, ethos and values are built into ICT learning. India has also seen the impact of Television shows, advertisements on life style of people.

2008 study in USA done by the Joan Ganz Cooney Center in collaboration with Common Sense Media found that most teachers see cell phones as distractions and feel that they have no place in school. In India most of the schools do not allow mobile phones/Tablets/lap tops inside classrooms. When ICT is introduced there would be changes and new challenges for teachers and families as these technologies can be addictive too and children may loose contact with the real world unless there is self-discipline and awareness about the negative effects of ICT.

4. **ICT theory of learning**

Currently, no widely accepted learning theory for ICT technologies has been established, hampering the effective assessment, pedagogy, and design of new applications for learning. In Indian context we need to study the long-term sustainable learning, increased ability to think and in problem solving, active contact with reality. Learning alone must be replaced with learning in groups both at virtual and in real time.

Differentiated access, enhanced quality of learning, availability of new knowledge and information and technology

Wide diversity in ICT technologies represents a challenge for teachers and learners who wish to accelerate academic outcomes as well as the producers who seek to facilitate such learning. Students may not depend on teachers for knowledge and information, as these would be easily available with the use of ICT. This may lead new demands on teachers to acquire more knowledge and skills to facilitate innovative thinking to sustain the interest of learners and schools may need to work towards projects centered learning and problem solving methods.

5. **Limiting physical attributes**

Poorly designed ICT technologies may adversely affect usability and can distract children from learning goals. Physical aspects of ICT technologies that may prevent an optimal learning experience include: restricted writing skills, reading books, socialization skills etc.

Consolidation is needed

It has been difficult to develop software applications for ICT due to proprietary platforms, and the computer; tablets/smart board industry has been slow to address this problem to meet the Indian requirement. It is also difficult to use web-based application due to undependable Internet speed. The power supply in rural areas is another challenge. Schools must have power supply during school hours and a multiple user ICT center must be available in each village panchayth/ward level with solar light and UPS facilities for children to use after school hours.

Explanation of findings

Most of the academic literature agrees that access to ICT can be a powerful tool in supporting educational inclusion. This section explores in greater depth some key aspects of ICT and inclusive education.

- **Assistive technologies**

Assistive Technology (AT) is the software and technology, which helps people with disabilities and special needs to overcome the additional challenges they face in communication and learning. For example, switch-operated software, onscreen keyboards and mouse alternatives are all types of assistive technologies.

A number of studies have shown that technology can enable students to overcome barriers to learning and develop positive relationships with peers and teachers. Careers reported that they had higher expectations of students' sociability and level of participation since the introduction of communication aids. Yet evaluation into the use of assistive technology is limited and often lacks detailed and comprehensive criteria for assessing the effectiveness of the devices (Clarke and Kirton, 2003; Worth, 2001).

Research studies indicate fairly positive outcomes from people with profound multiple learning difficulties using micro-switches and speech output systems. However, more advice, support and training for teachers and careers are needed to help students make effective use of the technology (Detheridge, 1997; Lancioni et al., 2001).

Speech-recognition software is of most value to those students who cannot produce handwritten work of sufficient quality or quantity. These systems can have a positive effect on reading and spelling with students showing significant improvement in word recognition, reading comprehension and spelling. However, not all students have expressed positive feelings about using the systems and have often reported the task of correcting speech recognition errors to be tedious and frustrating. In particular, some primary-age students have been unable to use such systems because the software has failed to recognize their high-pitched voices or unclear speech (DfEE/Becta, 2000; Higgins and Raskind, 2000).

Software and web accessibility

Good software design can benefit all students, and special needs students in particular. However, only a small percentage of curriculum materials are currently available in alternative formats accessible to those with special needs. Some students with special needs may need to use assistive technology in order to access the Internet. Yet even when this technology is available, access may still be problematic because the content is often not itself accessible - for example, when websites have not been designed with screen readers in mind. Inclusive design standards and guidelines as recommended by the W3C Web Accessibility Initiative (see http://www.w3.org/WAI/) can help to ensure universal access.

The 21st-century Learner

Most of the students have would have interacted with some of the ICT devices.
21st century learner with or without special needs is all set to explore the education using ICT technology. ICT will enable the learner and may change the role of our schools centers of teaching to facilitating and learning environments

➢ Goals for ICT based learning

From a state of uneven and scattered innovation into a force for dynamic educational impact.

We can sum up the five goals:

1) Learn and Understand ICT learning as a unique element of education reform to include children with special /diverse needs.

2) ICT technologies and their learning applications require a systematic research inquiry to determine how they can become an important driver of technology integration in education. Public and private sector support for needed R&D.

3) **Invest in understanding the development of "ICT enabled kids"** – Researchers, educators, and parents have entered new territory in digesting the implications of children's involvement with technology. Key developmental and health issues /socio –cultural issues should be carefully researched.

4) **Develop educational standards and guidelines for ICT based industry** - As ICT applications for children's learning proliferate, government bodies, industry groups, and parent advocates should collaborate on a consumer protection initiative to better describe educational effectiveness in interactive media products for children with special needs.

5) **Prepare: Train teachers and learners to incorporate ICT technologies-** Often the bulk of spending in incorporating technology into education is on the technology itself; however, preparing teachers and learners to use these technologies effectively should be a higher priority. National, state, and community leaders should:

6) **Build capacity: Digital teacher corps** – Teachers cannot teach what they do not know, and most have not been trained to use new technologies in their classrooms or afterschool settings. It is not just a matter of showing teachers how to use the devices; rather, it is crucial to provide them with methodologies for ways in which they can incorporate technologies within their curriculum.

Teachers' effective use of ICT with students is greatly enhanced through collaboration with peers. This is most effective when time is set aside for discussion and reflection away from the distractions of the classroom. Such discussions help teachers to become more observant of their students' forms of communication, and to interpret their responses so that teachers can devise targets and action plans for development. Online discussion forums can provide the means for this professional collaboration where it might otherwise be difficult or impossible. Moreover, encouraging participation from other health and non-educational professionals will continue to develop greater inclusion within schools (Detheridge, 1997; European Agency for Development in Special Educational Needs, 2003; Lewis and Ogilvie, 2002).

Connected learning communities

Leaders of special schools/inclusive schools, CBR programmes etc., where the effective use of ICT is well established, can develop new ways of working to support inclusion. Sharing best practice and the special skills of these schools can benefit colleagues in mainstream education, so reducing the divide between mainstream and special. This is already well developed in some areas. Such networks provide support in developing online information, professional development courses and contact for pupils and staff, in partnership with other schools and institutions.

Given the vital role that ICT can play in helping children with special needs to communicate and be involved in learning, it is disappointing that there is relatively little research published in academic journals regarding the use of ICT to support inclusive practice. Other sources of information include reports from charities and policy organization's with expertise in the area of special needs.

There are a growing number of small-scale case studies showing the difference that ICT can make to individuals both at school and at home. Many of these case studies are powerful evidence of the potential that technology has in making a profound difference for students. Such studies may also provide teachers with examples of the use of different types of ICT in varying circumstances, some of which may be applicable to their own students. Hence even though these case studies may be small-scale, they can be of significant value.

➢ Key areas of research in ICT for inclusion

1) Research is needed into the increased ICT skills required by teaching staff to exploit the technology's educational potential

2) Research and findings need to be more widely disseminated leading to policies on good pedagogical approaches using ICT to support inclusion in special needs education

3) Research on ICT for rural areas to develop locally appropriate ICT software applications for inclusion, scaling and improving the learning opportunities

4) Research on ICT enabled education and its impact on socio cultural fabric of India. This is an important area of research as ICT is a mere tool and its impact varies how well the technology is used by teachers/parents and the learner. Inappropriate use of ICT without monitoring/ICT self disciplines can lead to social problems.

5) Research on use of ICT by teachers is another area that needs an in depth study. Teachers may resist use of ICT with known and unknown fears that they may become obsolete and redundant in an ICT enabled learning environments. There are also cultural factors accepting technology as support to education system. Any change in system hurts when people are used to one way of functioning. Introduction of ICT in education may also have its teething trouble as the new gadgets in the classroom may be seen as the distraction for learning in the initial phase.

➢ Key questions for schools

1) Is the curriculum inclusive by ensuring equality of access and opportunity for all pupils, including and through the use of ICT?

2) How do your teachers keep up-to-date with the range of hardware and software to support their pupils?

3) How can special schools share effective practice using ICT with colleagues in mainstream schools?

➢ References

1) Becta's ICT Research - http://www.becta.org.uk/ research/ictrn/

2) DETHERIDGE.T, 1997.'Bridgingthecommunication gap for pupils with profound and multiple learning difficulties'. British Journal of Special Education, 24(1), pp. 21-26.

3) EUROPEAN AGENCY FOR DEVELOPMENT IN SPECIAL NEEDS EDUCATION, 2003. Special needs education in Europe: thematic publication. European Agency for Development in Special Needs Education. http://www.european-agency.org/publications/ agency publications/ SNE Europe/ downloads/ Thematic Publication English.doc

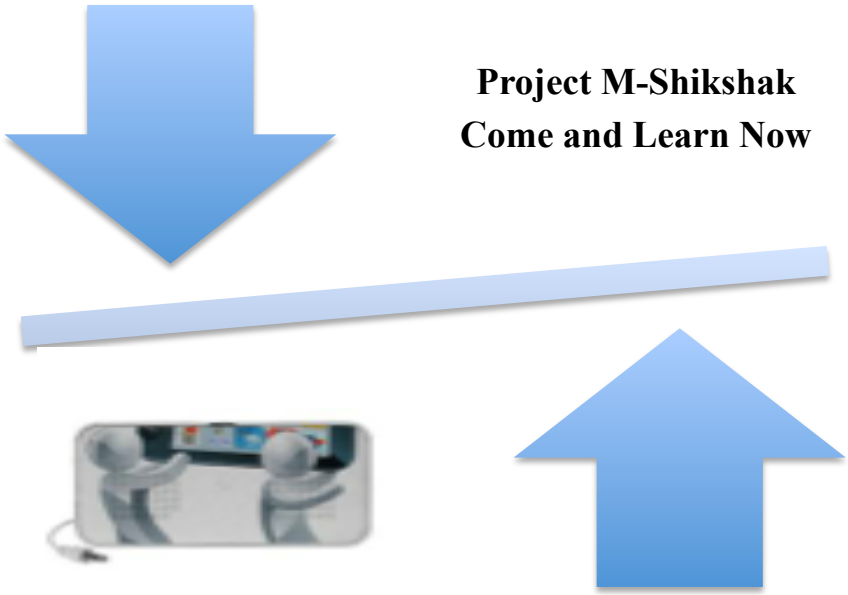
4) Inclusion in every schools-E learning and M learning solutions by CBR NETWORK and Ipomo, Bangalore, India (2013)

5) LOISELLE, J., etal.2001.‘Integratingtechnologyin classrooms with learning disabled students: teachers' needs and professional development implications’. In Price. (Ed.), 12th International Conference of the Society Association for the Advancement of Computer Technology and Teacher Education, 2001. Pp. 2626-2630.

6) MOORE, D. AND TAYLOR, J., 2000.‘ Interactive multimedia systems for students with autism’. Journal of Educational Media, 25 (3), pp. 169-175.

7) UNESCO-Model Policy for Inclusive ICTs in Education for Persons with Disabilities, Paris, 2014

Chapter -2-Mobile based Learning - M-Shikshak



IPOMO

Ipomo Bangalore pioneered some of the best programs in the education space like mobile attendance, mobile assessments, mobile MOCK etc. Check out how these programs are making a huge impact in the education space.

With many years of research in teaching-learning methodology, Ipomo is poised to bring in much needed revolution in the education space. Check this page for surveys, trends, analytics and much more.

Across schools, colleges and institutions of higher learning, the focus today is on the quality of learning of the students. Here is the next generation solution to enhance the quality of learning in an interactive manner.

Integrating M learning solution into your system is very simple.

IPOMO Campus is the world's first mobile-based learning and administrative solution to address the needs of student, parent, teacher and management.

Classroom Management

Attendance & Internal Marks: Teachers take attendance & enter internal marks on the device and submit for real time consolidation.
Reports: Teachers can pull real-time report of a student anytime, anywhere. Consolidated reports can be obtained anytime, anywhere

- **Continuous Internal Assessment:**

Conduct tests: Institute can conduct internal tests (objective type) using mobile phones
Immediate results: Students can know their results immediately
Identify learning patterns: Helps in identifying slow and advanced learners objectively

- **Career Guidance and Student/Parent Engagement:**

Interactive guidance and mocks: For various competitive exams (CAT, GRE, GATE, CET, IIT, AIEEE, AIIMS etc.)
Sharing with students/parents real-time reports on- Academic performance
- Attendance
- Institutions events/notes
- Announcements

IPOMO collaboration with CBR NETWORK

IPOMO has developed M-Shikshak project in collaboration with CBR NETWORK with a focus of scaling up educational access to persons with disabilities.
M-Shikshak aims to provide E-solutions by providing mobile-based interactive virtual platforms with accessibility global standards. The learning options are available in any Indian language. Efforts are made to develop learning materials in other Asian languages.

What is M-Shikshak project?

- **M Learning -** You thought mobile phone is used only for talking, SMS, Internet and entertainment. Mobile Classrooms are extremely popular all over the world.

- **M-Shikshak is friendly teacher available to help you learn 24x7. Isn't this wonderful?**

- **Who can join M-Shikshak? -** Any learner can join studying in classes 1^{st} to 10^{th} Parents with children in 0-6 age group can also join.

We encourage children who have difficulty in seeing; hearing, learning, moving and other difficulties, which make it difficult to go to school, can also join. We have special programmes for them with universal accessibility design system.

- **What do we teach? -** We teach curricular content (Classes 1-12th Std), plus curricular content (Braille, Abacus, Speech training, sign language, behavior modification skills, abacus, reading activities etc.) and also lots of games to help you to learn better.

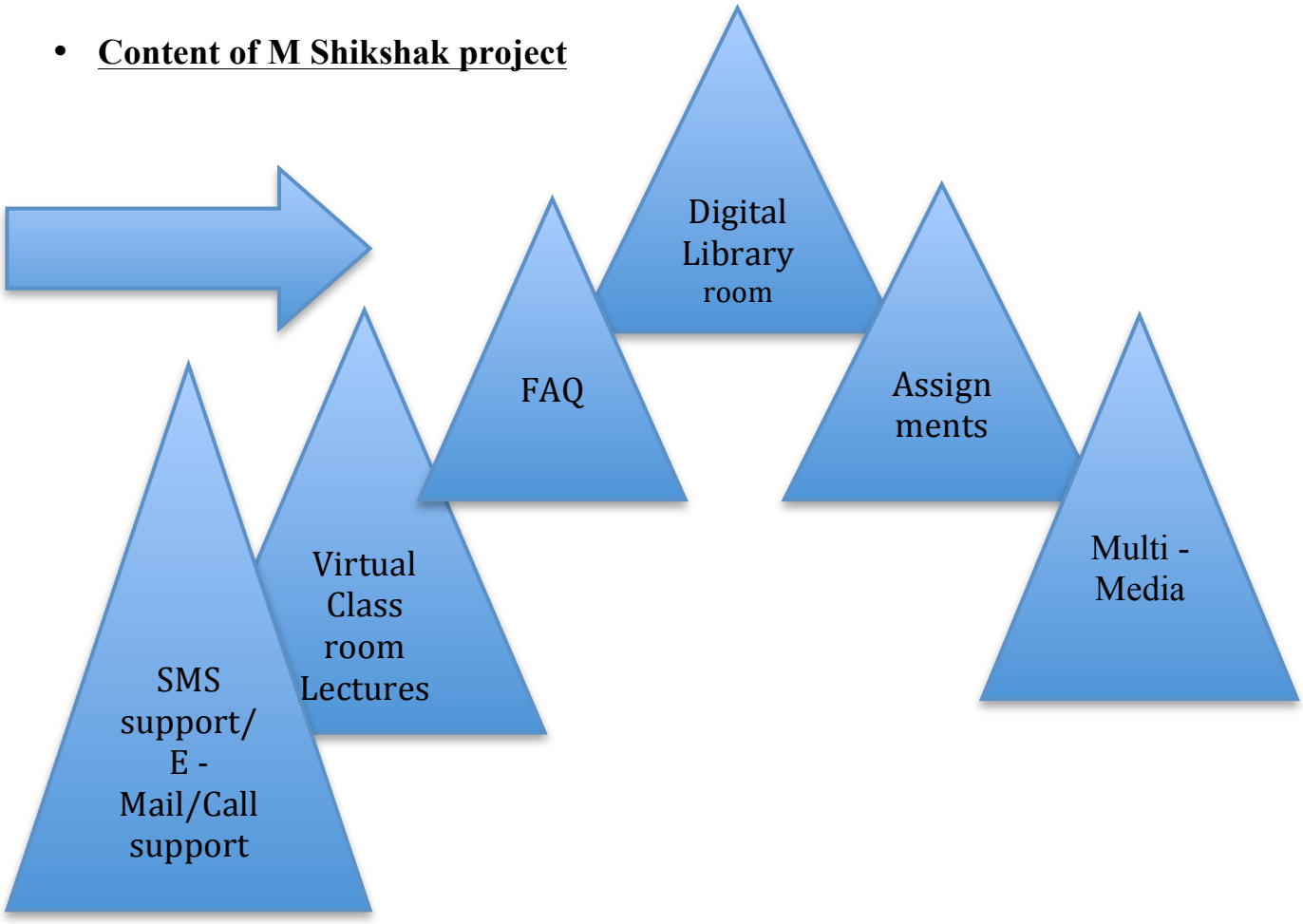
- **What languages? -** We teach in all languages [English, Kannada and Hindi] used in India.

For 0-6 age group child

We have special early childhood development package called Indian portage for parents to help their child to achieve holistic development.

Do not worry if there is no support in your village or town. Join M-Shikshak school. A friendly teacher ever ready to help you to learn better.

- **<u>Content of M Shikshak project</u>**



- **How much does it cost? -** To Join M-Shikshak you need to pay Rs.250 per subject/ year.

- **Can you get scholarships? -** M-Shikshak provides free scholarship to children with disabilities from poor economic background.

- **Accessibility -** M-Shikshak has built in accessibility features with text to speech-touch screen keyboard, volume controls, multi level of competency to progress ay individual pace of learning.

- **Content presentation & IEP -** M-Shikshak has IEPs built in for each learner. The content, Method, Materials and Evaluation has learner-centered adaptation which a learner chooses based on the need.

- **Do you have a phone with Android application? -** You need to have an android phone to join M –Shikshak programme.

- **Cost in India - Android mobile phone**

Nokia mobile Android Phone - Two Nokia android mobile phone models are suggested by Microsoft. They are mentioned below: -

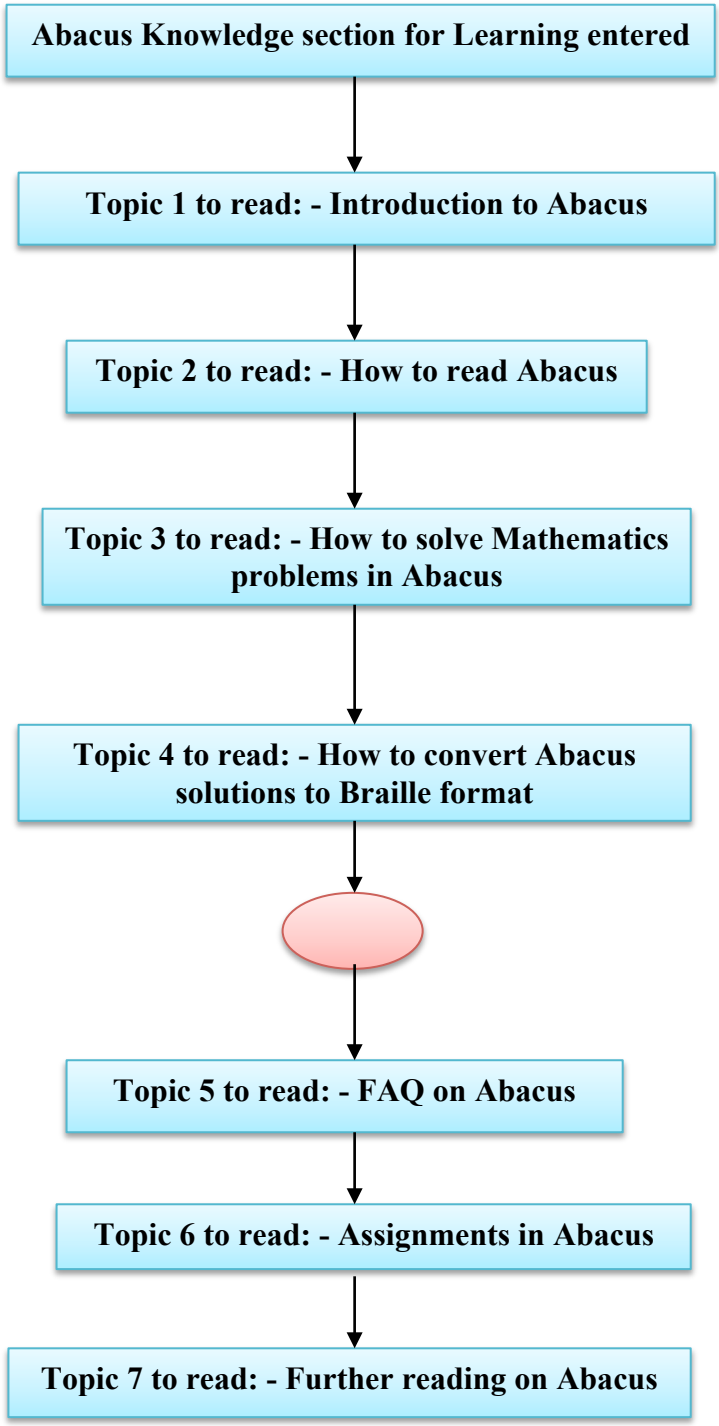
1. Nokia X whose cost is Rs. 7000/- for each unit mobile phone
2. Nokia XL whose cost is Rs. 10000/- for each unit mobile phone

- **Inside M –Shikshak**

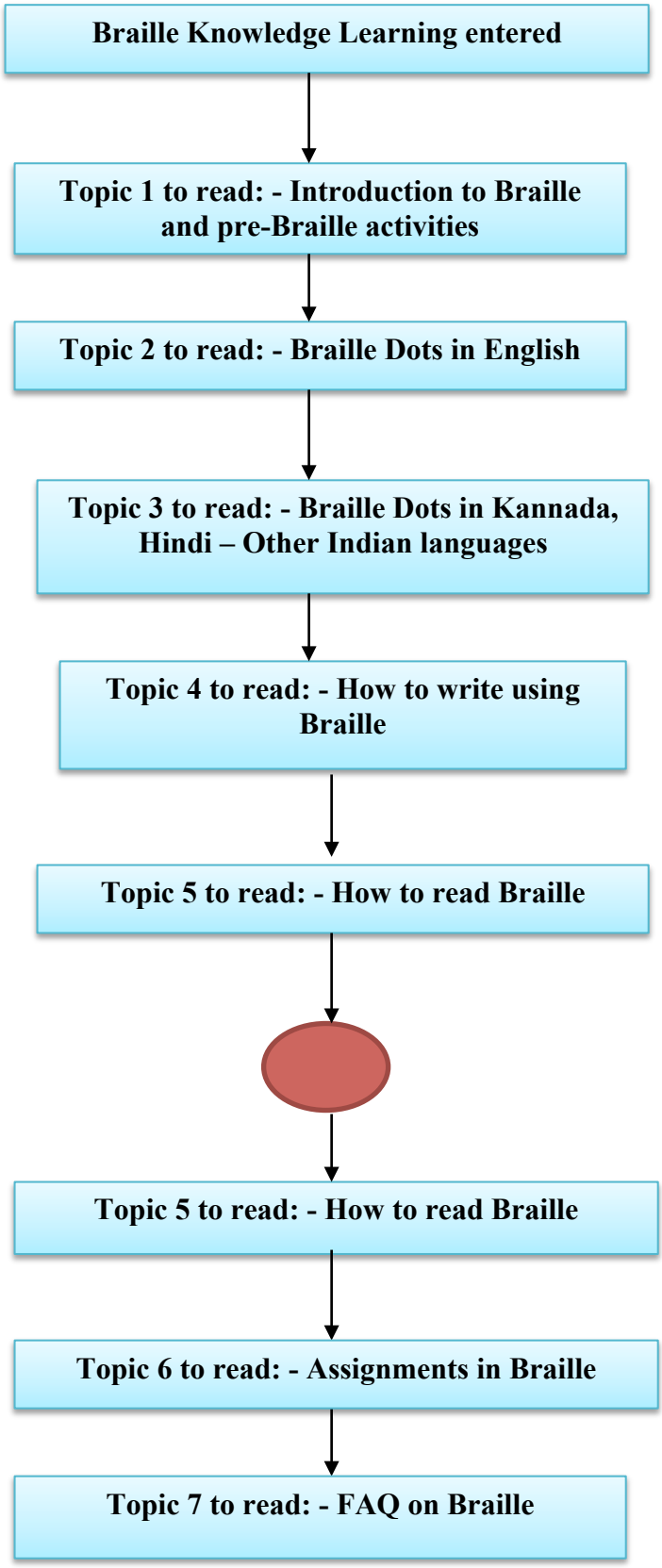
Curricular content (all subjects)	Plus Curriculum	Presentation	Evaluation
CBSE Stream	Braille, Abacus, Taylor frame, O and M training, Pre Braille skills, ADL, Adaptations of general curricular content	Virtual lectures Multi Media Digital Library FAQ SMS/E mail support/Blog Joyful learning activities (games)	Daily an weekly evaluation based with a criterion of success for each curricular concept-sub concept with specific, Measurable, Observable and achievable Learning outcomes (SOMA features for precision learning system)
State level syllabi	Sign Language, Speech therapy, Adaptations of general curricular content	Same as above	
Open School	Portage Early childhood development, TALC-Pre Vocational skills, Behavior modification skills, Specific learning disability Reading levels, reading activities, ABC Analysis etc.		

- **How to Join? -** Fill the form and send it to our center along with your fees. Schools /NGOs can also enroll children in-group. If NGOs /school help children to give mobile phones on hire basis.
- **What kind phones you need? -** Any phone with android application.
- **How M Shikshak works?**

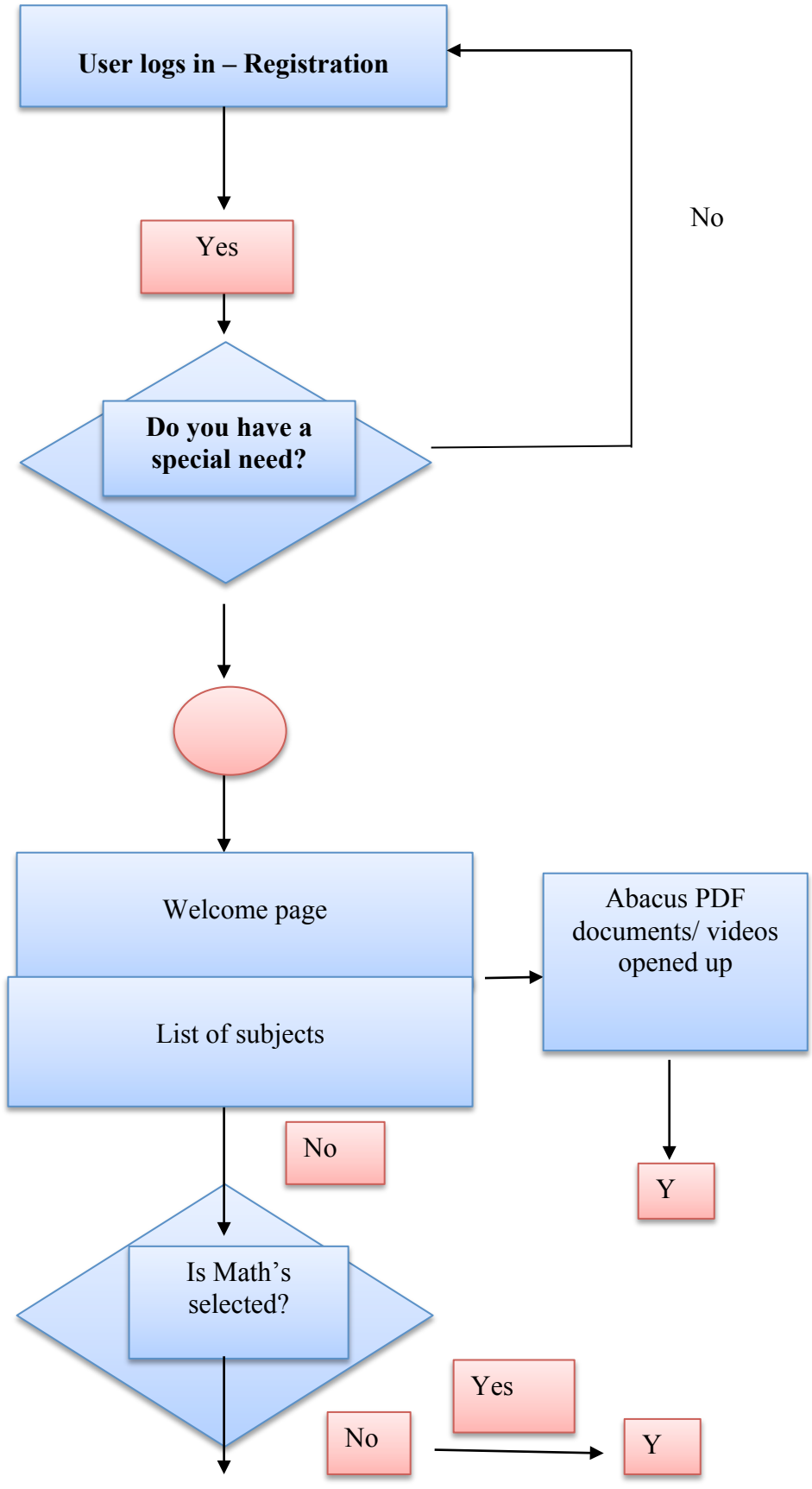
➢ **Flow chart on Abacus Learning**

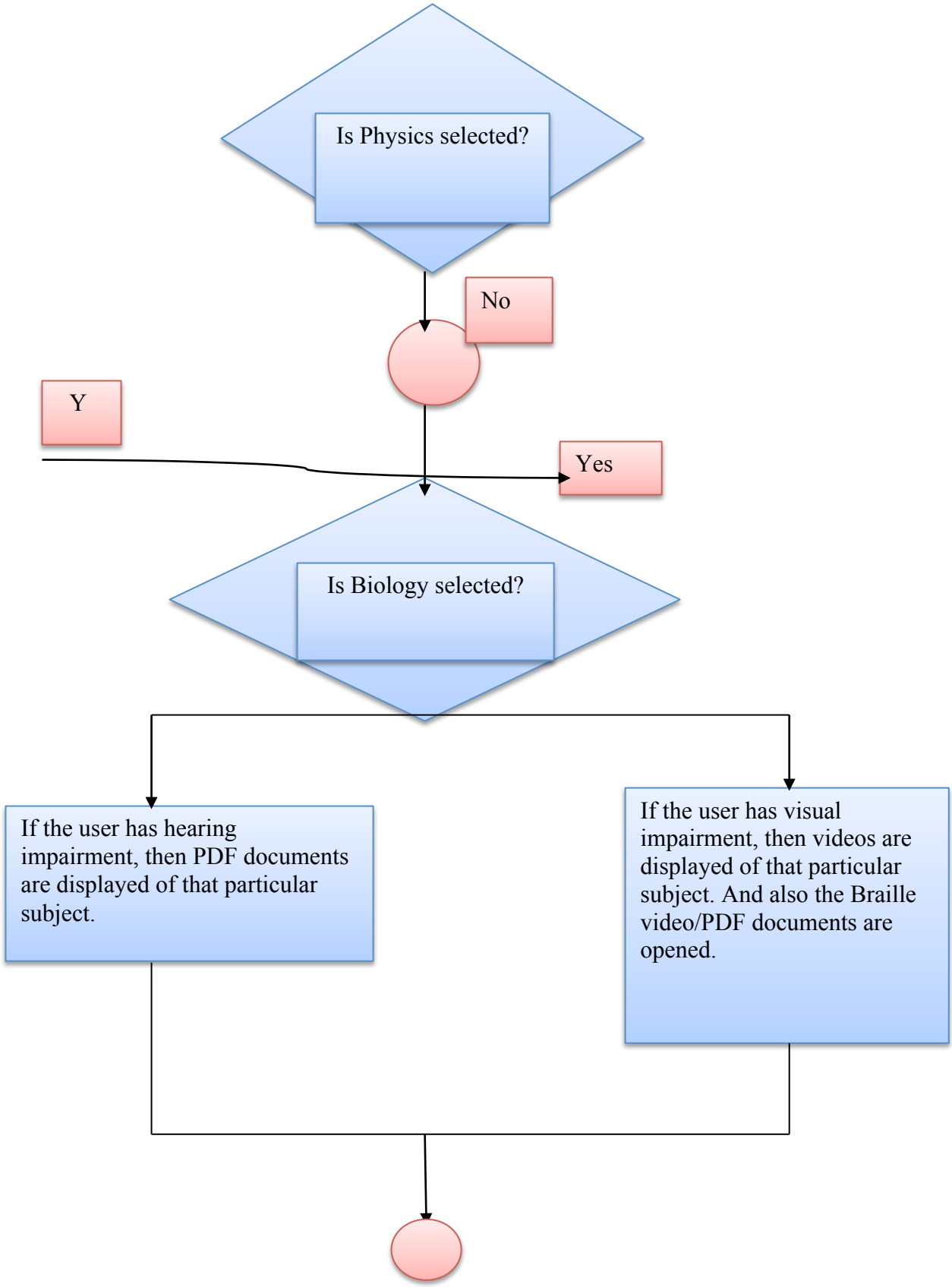


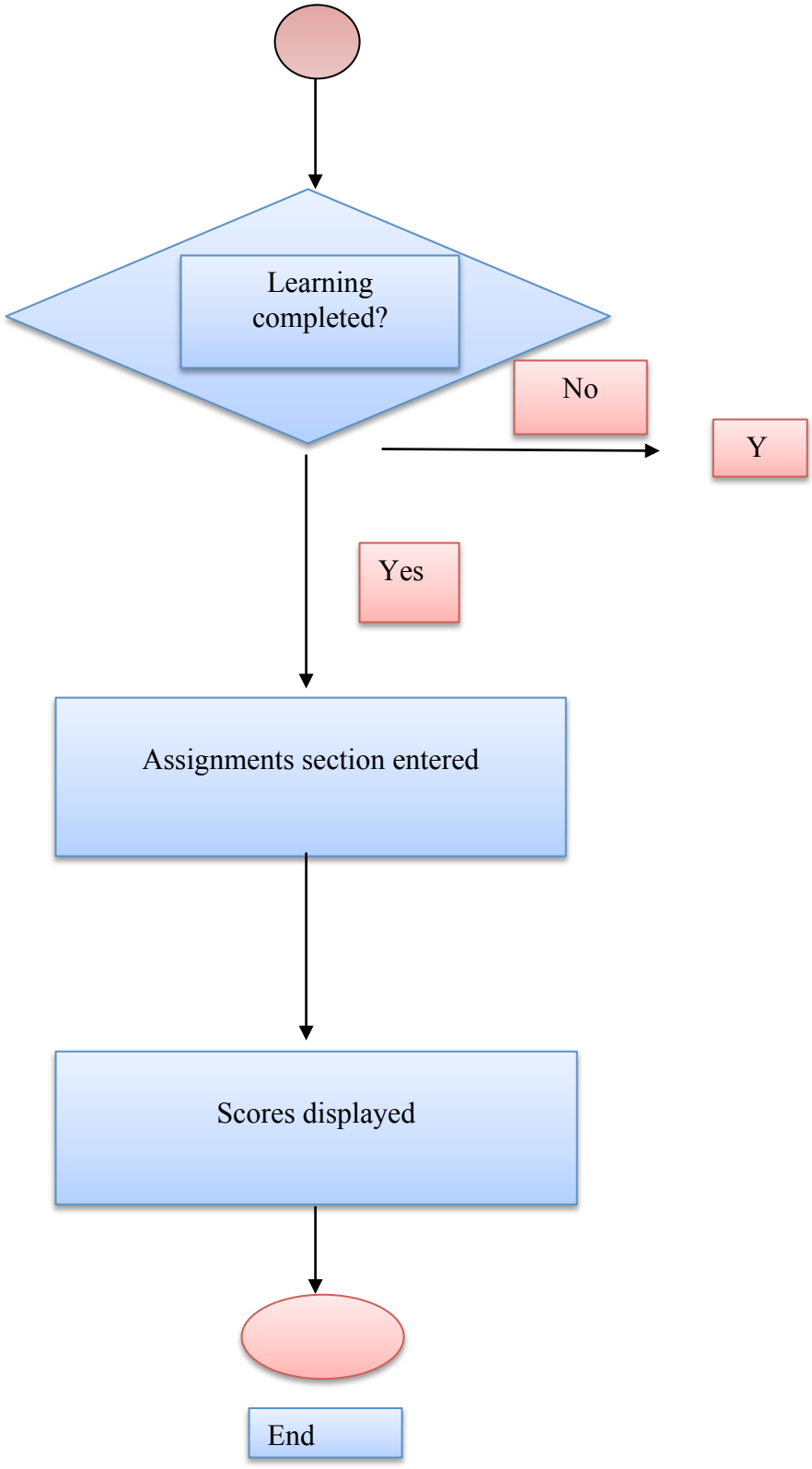
➢ Flow chart on Braille Learning



➢ Flow chart of the M-Shikshak mobile application




Is Physics selected?
No
Y
Yes
Is Biology selected?
If the user has hearing impairment, then PDF documents are displayed of that particular subject.
If the user has visual impairment, then videos are displayed of that particular subject. And also the Braille video/PDF documents are opened.


Learning completed?
No
Y
Yes
Assignments section entered
Scores displayed
End

Chapter-3-ICT to improve employability of persons with disabilities

A case study research-Accessibility for Hearing Impaired persons in Airport Ground Handling section

By

Ashwini Sathnur
CBR Network

Accessibility for Hearing Impaired persons in Airport Ground Handling section

In aviation, aircraft ground handling defines the servicing of an aircraft while it is on the ground and (usually) parked at a terminal gate of an airport.
Many airlines around the world subcontract their ground handling to an airport or a handling agent, or even to another airline. Ground handling addresses the many service requirements of a passenger aircraft cargo aircrafts and Non- schedule aircrafts, between the time it arrives at a terminal gate and the time it departs on its next flight. Speed, efficiency, and accuracy are important in ground handling services in order to minimize the turnaround time.
Airlines with less-frequent service or fewer resources at a particular location sometimes subcontract ground handling or on-call aircraft maintenance to another airline, as it is a short-term cheaper alternative to setting up its own ground handling or maintenance capabilities.
Airlines may participate in an industry-standard Mutual Assistance Ground Service Agreement (MAGSA). The MAGSA is published by the Air Transport Association (the current version is from 1981) and is used by airlines to assess prices for maintenance and support to aircraft at so-called MAGSA Rates, which are updated annually based on changes in the U.S. Producer Price Index. Airlines may also contract for ground handling services under the terms of a Standard Ground Handling Agreement (SGHA) that is updated and re-published from time to time by the International Air Transport Association (IATA), the current version is from January 2008. Airlines may also contract for ground handling services under non-standard terms.

➢ Types of Services

- Passenger Services
- Ramp Services
- Cabin Services
- Catering Services
- Baggage Handling
- Baggage Services
- Weight and Balance
- Flight Operations

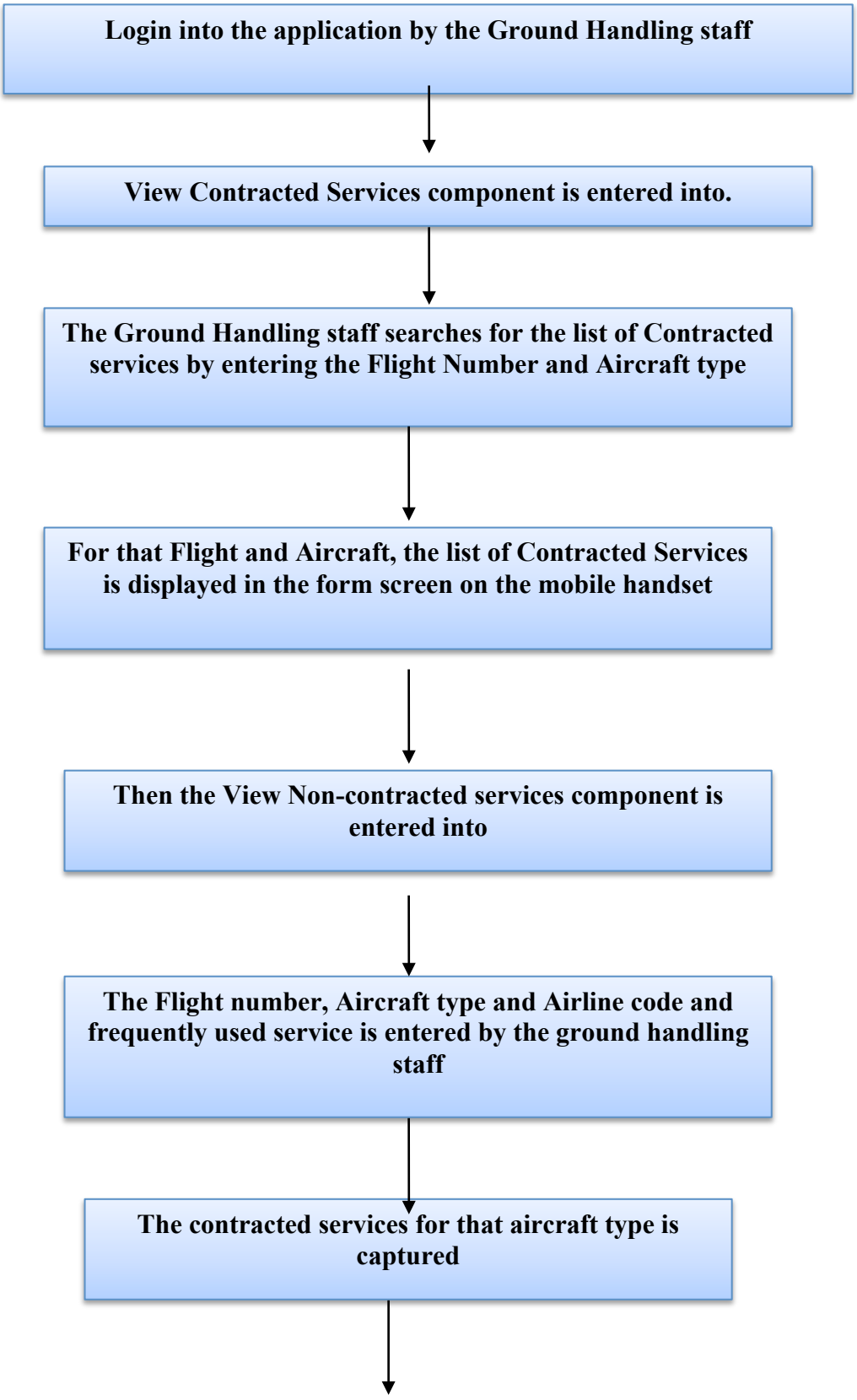
There are hearing impaired persons employed in the Ground Handling section in the Airport who have difficulty in communicating while at work. This product “Accessibility” is for the purpose of bringing about a transformation in this section and enabling the hearing impaired persons and mainstreaming them into the main sections of society. And thereby creating an inclusive work culture. Leading to socio-economic progress of the society.

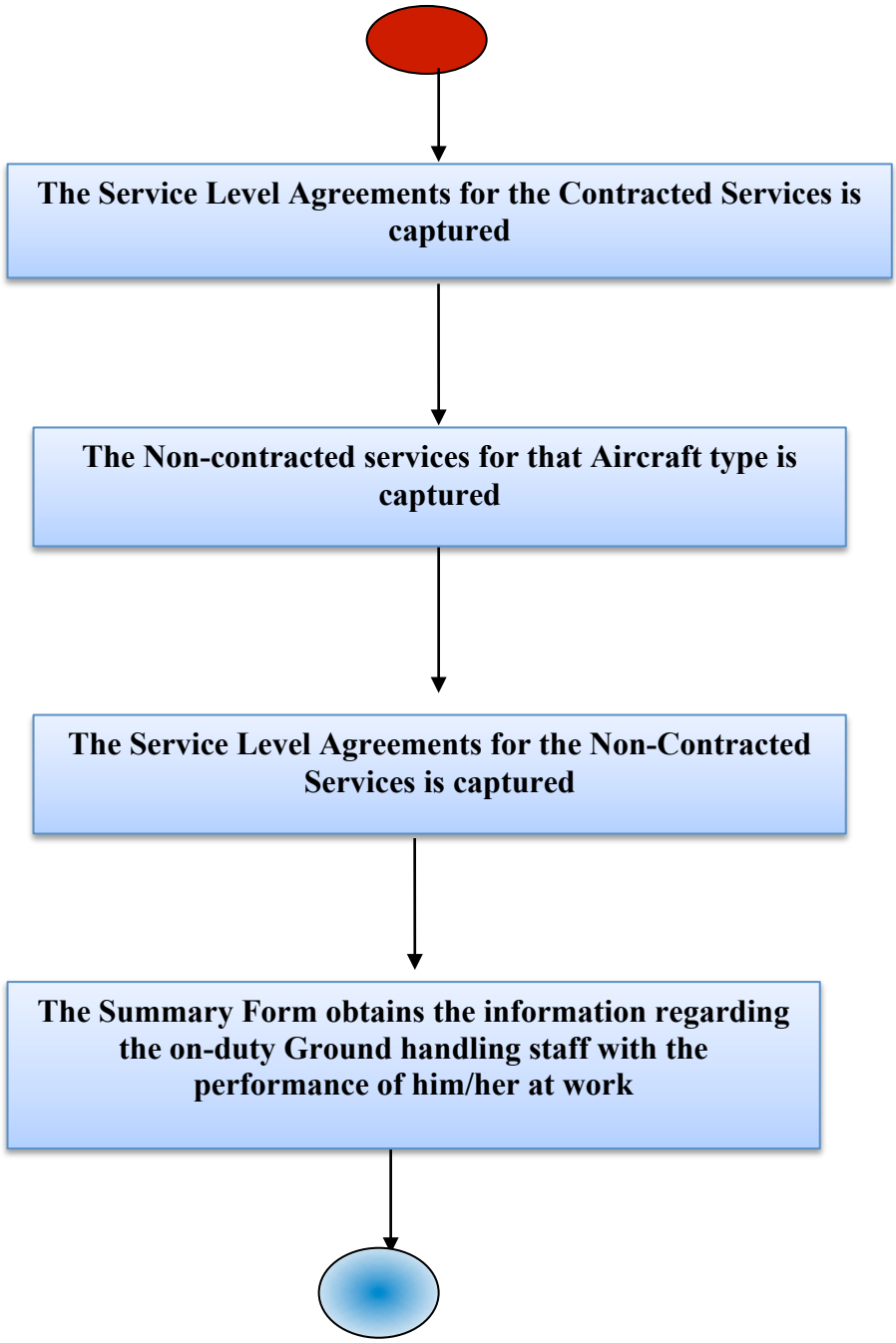
Figure: Hearing impaired persons at the Ground Handling section in Airport

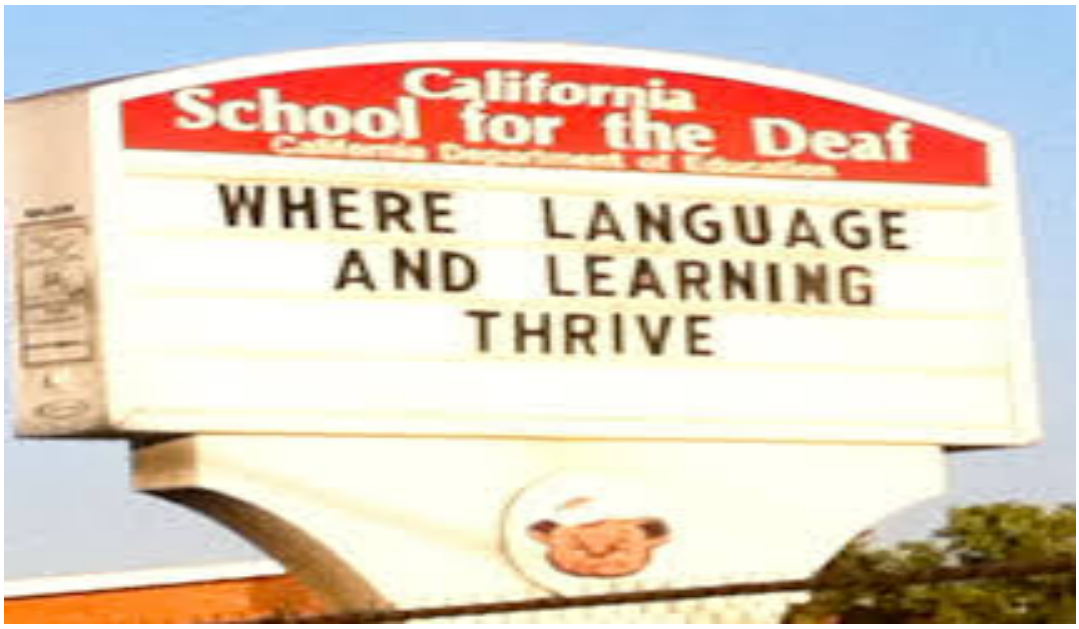
The project eliminates the use of paperwork process in the Airport Ground Handling section and introduces the concept of mobile technology for streamlining the process of Ground Handling.

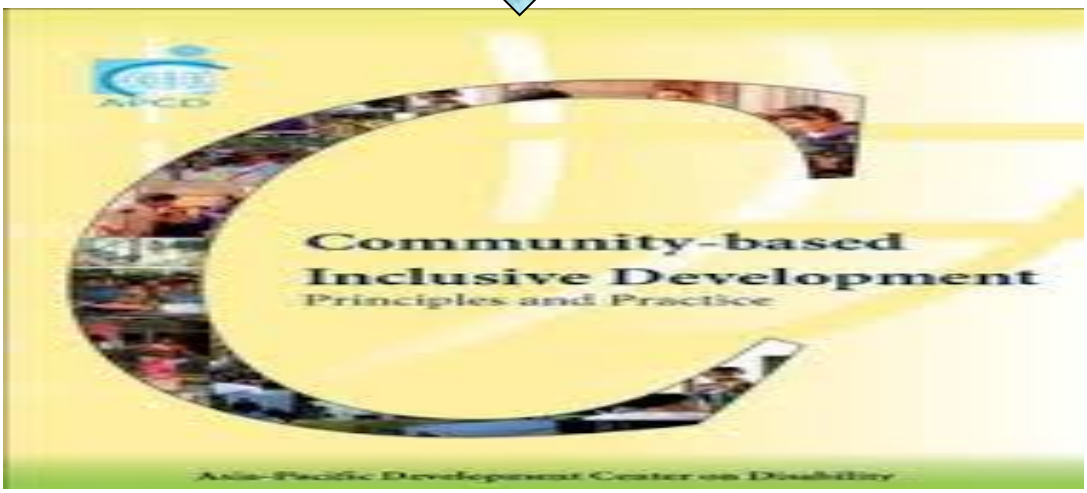
Figure: Ground Handling section in Airport

The flowchart of the product's capabilities and functions is described below: -




The Service Level Agreements for the Contracted Services is captured
The Non-contracted services for that Aircraft type is captured
The Service Level Agreements for the Non-Contracted Services is captured
The Summary Form obtains the information regarding the on-duty Ground handling staff with the performance of him/her at work
End


California
School for the Deaf
WHERE LANGUAGE
AND LEARNING
THRIVE


APCD
Community-based
Inclusive Development
Principles and Practice
Asia-Pacific Development Center on Disability

A Brief Note about the Product

It supplies list of contracted and non-contracted services on the mobile handheld device. So the information is provided to the ground handling staff on the fly. And when they are working on the Ramp of the airport.

These ground handling staff, which are being dealt with here, are basically hearing impaired. Hence instructions given to them from the Airport has to be in text and not in calls on the mobile.
Hence the meetings between the airline and airport staff and these ground handling staff has to be in the form of a mobile application which displays the required features on the mobile.
And since this deals with hearing impaired people, it also takes into account, the feature of rehabilitation in the Airport IT.

The contract management stream within Airport IT aims at providing contract management solutions to ground handlers. In addition to the management of contractual data and actual creation of contracts and related documents, it also aids the ground handlers in generating billing reports, tracking compliance, and analysis of costs and revenues. Document management, creation of pricing models, monitoring performance and interfacing with the resource management system are other services provided by the product.

This document focuses on the mobility requirement within the Contract management stream.

Ground handlers provide services based on the SLA and contract agreement with the airline. Apart from the listed services in the contract agreement, Airlines also request services on an ad-hoc basis. The mobility solution provided by Contract management system allows ground-handling agents to view the list of services to be provided using a rugged hand-held device. The solution allows users to log additional services to keep track of ad-hoc services provided per airline per aircraft in addition to the services provided as per agreement. Contracted tasks are available to the agent, and they can log delivery of service for a flight for the full turn-around or for individual services.

The Mobile Solution delivers three very useful features:

1. Tracking and logging contracted and non-contracted tasks for detailed billing and revenue generation

2. Tracking SLA compliance and performance measurement of the each services

3. Display contracted services and non-contracted services for the selected airlines.

References

- Pictures from Google.com

Chapter-4 - Existing ICT Accessibility Devices

The use of Information and Communication Technology (ICT) is increasing and proving to be of greater importance in people's day-to-day lives. However, this increase in use and importance of ICT raises concerns as to whether these technologies are fully accessible for all people, especially to disabled and elderly people.

Access by disabled and elderly people to technology is a major issue in allowing their integration in society. The growing global proportion of disabled and elderly people signifies that the urgency of this issue will not decrease in the years to come.

What is ICT accessibility?

This sub-section provides a definition of ICT accessibility and information on other terms used such as Usability, Universal design, Design for All and Inclusive design.

Who benefits from ICT accessibility?

This sub-section provides information on the user groups that benefit from ICT accessibility. For example: Blind and partially sighted people; Deaf blind people; Hearing, Physically, Cognitively and Language impaired people and the Ageing population.

Why ICT accessibility?

This sub-section offers several reasons why ICT accessibility should be considered by designers and researchers: the Demographic, Business, Legal and Moral case.

Assistive Technology

This sub-section provides a definition of assistive technology (AT) and information on the different types of assistive technologies that exist to help the different types of user groups.

ICT Devices

This section contains technical and price information on ICT devices that are currently commercially available and provides contact details of the manufacturers of the devices. The manufacturers or their agents have provided the data and the authors have not verified the accuracy of their claims. Prices are quoted exclusive of sales tax, value added tax, shipping costs or import duties unless otherwise stated.

A. **Visually Impaired**

B. **Hearing Impaired**

A. Visually Impaired

1. Audio Playback Equipment

This section is limited to audio playback equipment that has been specifically designed for use by blind and partially sighted people. Over the last few years the trend has been to move from analogue systems that included standard cassette recorders and players to digital ones that play CD's, Mini Discs, MP3 files and more recently DAISY files.

American Printing House for the Blind

1839 Frankfort Avenue, PO Box 6085, Louisville, Kentucky 40206-0085, USA. Tel: +1 502 895 2405 Fax: +1 502 899 2274 Email: info@aph.org Web: www.aph.org

Handi-Cassette II

Compact talking book tape recorder/player. Features include: Digital Pitch Control (DPC); 2-track or 4-track play at either 1 7/8 inches per second or 15/16 ips (Talking Book speed); Built in mono speaker and microphone; Stereo playback through included headphones; tactile symbols on controls and touch checking of tape movement. Powered by electrical outlet, rechargeable batteries or regular batteries. **Length:** 171mm **Width:** 110mm **Height:** 57mm **Weight:** 0.68kg **Ref:** 1-07085-00 (US model) **Price:** $185.00 **Ref:** 1-07085-01 (International model) **Price:** $175.00 **Last updated:** 07/07/2009

2. **Table Top Cassette Tape Recorder/Player**

Listen to Talking Books or commercial cassettes with this portable tabletop unit. Features include: Digital Pitch Control; Play and record on 2 or 4 tracks and at 1 7/8 inches per second or 15/16 ips (Talking Book Speed); Built in mono speaker and microphone; Stereo playback through optional headphones; Tactile symbols on controls and touch checking of tape movement; Powered by electrical outlet or rechargeable battery pack. **Note:** The U.S. version of this tape recorder/player (Model 5198A) has been discontinued. The European version does not require an adapter. **Length:** 290mm **Width:** 230mm **Height:** 70mm **Weight:** 1.9kg **Ref:** 1-07150-02 **Price:** $225.00 **Last updated:** 07/07/2009

3. **Bones GmbH**

Zentralstrasse 68, CH-8212 Neuhausen, Switzerland. Tel: +41 52 672 28 25 Fax: +41 52 672 28 24 Email: info@bones.ch Web: www.bones.ch

Milestone 311 DAISIES

Milestone 311 Daisy is an audio book player, note taker, music player and, with the accessory Speak out, also a tag reader. The slot on the side holds SD memory cards. To exchange data with a computer simply connect the USB cable to it and Milestone appears as an additional drive on a Windows or Mac computer. No extra software need be installed. The Milestone 311 Daisy allows access to the structures of Daisy books, such as all available headers, phrases, page numbers, bookmarks and more. A sleep timer is available, too. The note taker from Milestone 310 has been integrated and extended with folders. The integrated MP3 player of Milestone 311 has the ability to fast forward through files and the full accessibility of folder structures including voice tags. **Width:** 14mm **Last updated:** 07/07/2009

4. **Milestone 312**

Voice recordings can be done with Milestone 312 and played back over its speaker or headphones. The integrated music player plays all popular formats. Text files can also be played with Milestone 312. With the built-in text to speech software from Acapela, Milestone 312 converts and reads text files. Milestone 312 also plays DAISY books and can increase and decrease playback or reading speed via several levels to conform to personal tempo. Further applications include an integrated clock, alarm and more. Milestone 312 integrates the newest USB 2.0 High Speed connection and guarantees a rapid access to the computer. The internal memory space has been increased up to 1GB and is expandable by an insertable SD memory card. The following file formats are already usable with Milestone 312: MP3, AAC, WMA, WAV, TXT, DAISY 2.02, AA/AAX (Audible). **Last updated:** 07/07/2009

GaiShan Technology Pte. Ltd. - 1 Gold hill Plaza. #02-35, Gold hill Plaza, 308899, Singapore.Tel: +65 984 895 03 Email: enquiry@gaishantech.com Web: www.gaishantech.com

5. **Tell Mate**

It has a one-gigabyte memory and can be used as a music player, radio, clock, talking book player, voice recorder and label reader. The Tell Mate uses RFID tags that can be attached to, for example, different food items in a kitchen cupboard. Each label transmits a low-powered signal to the device, which then plays the audio clip that has been recorded and associated with it. The labels can be re-used by recording a new audio clip. **Last updated:** 07/07/2009

6. **Human Ware**

11 Mary Muller Drive, PO Box 3044, Christchurch, New Zealand. Tel: +64 3 384 4555 Fax: +64 3 384 4933 Email: nz.info@humanware.com Web: www.humanware.com

Classmate Reader

The portable digital audio book player helps students increase their reading speed, comprehension and vocabulary. The Classmate reads aloud and simultaneously displays and highlights text on its full color screen. Its interface can be configured to the user's specific needs. It also includes study tools to enhance learning such as bookmarks, recording, highlighting function and a speaking dictionary. With built-in text-to-speech, it works with e-text or NIMAS files. Its full-color screen can be configured to change font type, text size, and color, line spacing, etc. The user can adjust text-scrolling speed and move text to view above or below the passage read. Other features include: Synchronized text and audio; Text or Voice Notes: allows to take personal notes within the text to complement comprehension; Speaking Dictionary: instant access to more than 25,000 words. Provides spelling, pronunciation and meaning; Create personalized tests in text format to accommodate students during exam periods; Plays DAISY 2.x, DAISY NISO, MP3, NIMAS, Txt, HTML, XML; Playback through stereo headphones or built-in speaker; Connectable to external thumb drives-USB drives; USB 2.0 port to connect to PC as Windows USB drive; Replaceable rechargeable battery (7 hours playtime); Built-in battery charger - can be played

while recharging and built-in stand - for hands-free listening. **Length**: 154mm **Width**: 89mm **Depth**: 24mm **Weight**: 0.3kg **Last updated**: 07/07/2009

7. **Victor Reader Classic X**

The Victor Reader Classic X is a portable audio playback device that operates using integrated rechargeable batteries. It offers basic navigation features like browsing the table of contents, skipping from section to section or from page to page. Other features include: Easy to locate and operate controls, variable play speed, easy CD insertion/removal, ability to play music CD's and MP3 Audio File CD's, dedicated Sleep button, audio announcement of battery capacity and power light indicator. **Length:** 240mm **Width:** 210mm **Height:** 50mm **Weight:** 1.1kg **Last updated:** 07/07/2009

8. **Victor Reader Classic X+**

Portable audio playback device designed for professionals and students for reading complex and highly structured books like textbooks, reference works and school manuals. It supports all DAISY navigation levels and has advanced functionality such as skipping instantly to a specific page and placing multiple bookmarks. Other features include: Easy CD insertion/removal, plays audio and MP3 CDs, variable play speed with pitch compensation, Key Describer Function speaks functions of each key, dedicated Sleep button, audio announcement of battery capacity and power light indicator. **Length:** 240mm **Width:** 210mm **Height:** 50mm **Weight:** 1.2kg **Last updated:** 07/07/2009

9. Victor Reader Stream

This DAISY, MP3 and NISO player has a removable SD card for storing books, e-text files, music, and voice recordings and audio bookmarks; Ability to play NLS download books and NLS book cartridges; Built-in human sounding text-to-speech (Nuance Vocalizer); Voice recording capability via built-in microphone or external microphone; Playback through stereo headphones or secondary small speaker; USB port to transfer books and music from your PC; User replaceable rechargeable battery providing 15 hours playtime; Built-in battery charger (four hours for full recharge). Advanced DAISY book features include: Four-arrow keys for navigation by chapter, section, page, and bookmarks; GOTO features to jump to a specific page, heading, book or bookmark; Browse bookmark list; Allows navigation of multiple books, MP3 folders, and voice notes; Audio bookmark with recorded voice note. **Last updated:** 07/07/2009

10. Victor Reader Wave

Victor Reader Wave is a sophisticated DAISY talking book, MP3, and music CD player. Blind and low vision users will enjoy the familiar telephone-style keypad, tactile zones, and audio feedback for controls and navigation. Learning-disabled users will benefit from the large-screen display of navigation commands, book title, and section headings. Audio message and visual progress bar for reading position. Audio and visual indicators for volume, speed, and battery level. Variable-speed playback with auto-pitch compensation. Supports all DAISY navigation levels: Go to chapter, section, page, paragraph, or custom bookmarks. Supplied with: Earphones, power adapter, carrying case and rechargeable batteries. Batteries can be charged within the unit. Also runs on standard AA batteries. **Length:** 148mm **Width:** 138mm **Height:** 29mm **Weight:** 260g **Last updated:** 07/07/2009

11. Plex Talk Pocket PTP1

A lightweight, pocket-sized, DAISY-compliant music, voice, and book player/recorder. Other features include: One touch recording, choice of sound output via built-in large volume speaker or bundled stereo earphone, automatic sleep timer function, supports SD cards, connects to Windows 2000, Vista or XP by bundled USB cables and rechargeable battery by USB. **Length:** 112mm **Width:** 55mm **Height:** 16mm **Last updated:** 07/07/2009

12. Plex Talk Player PTN1

Features include: simple interface for ease of use; play music CD (CD-DA), MP3 and DAISY 2.0/2.02 audio books; slot-loaded CD drive; built-in sound speaker; bookmark; page/time jump; digital playback speed control without changing the pitch (50% - 300%); tone control; sleep timer. **Width:** 220mm **Height:** 172mm **Depth:** 56mm **Weight:** 1.2kg **Last updated:** 09/07/2009

13. Plex Talk Portable Recorder PTR2

PTR2 plays DAISY and various other digital audio book formats. Can also play music CDs, MP3s and

Ogg Vorbis burnt into CD or memory card. Variable speed searching. Can record and edit audio files. Voice guidance will guide you to operate all functions. Other information such as elapsed time, remaining time, total time of the audio book, and possible recording time on the media are available on voice guidance. And also key describer function, which you can hear the function of each key is available. About 8 hours of recording and playback is possible under battery operation. Includes timer and calculator functions. **Length:** 205mm **Width:** 167mm **Height:** 50mm **Weight:** 940g **Last updated:** 09/07/2009

PURE Digital - Imagination Technologies, Home Park Estate, Kings Langley, Herts WD4 8LZ, UK. Tel: +44 1923 277 488 Fax: +44 1923 265 748 Email: sales@pure.com Web: www.pure-digital.com

14. Chronos 2 DAB radio

Silver, triangular shaped digital radio with built-in alarm clock. Each of the four alarms can be set for weekdays only, weekends or as a "one off". Other features include a large LCD display, which shows the time in 1.6cm high lettering when on standby. When listening to the radio, the radio station name is shown in 8mm high lettering, up to 20 preset radio stations, light sensor automatically adjusts the display brightness to suit the light levels in the room, automatic time setting from radio signals with adjustment for daylight saving time in spring and autumn, sleep timer and snooze button and supplied with mains power adapter. **Length:** 190mm **Width:** 170mm **Height:** 60mm **Weight:** 0.59kg **Price:** £59.99 **Last updated:** 09/07/2009

15. Evoke 1S DAB radio

This digital radio has a crystal clear display that shows the current radio station name in 6mm high yellow lettering on a black background. It has two silver dials for volume control and channel selection and 11 raised buttons for preset channels, settings and power. Other features include: a light sensor that automatically adjusts the display brightness to suit the light levels in the room; automatic time setting from radio signals with adjustments for alarm and daylight saving time in spring and autumn and up to 30 preset radio stations. **Length:** 210mm **Width:** 175mm **Height:** 110mm **Weight:** 1.53Kg **Price:** £99.99 **Last updated:** 09/07/2009

16. Move Portable DAB radio

A palm-sized, compact digital radio with a brushed chrome face and black rubberized shell. Other features include: a bright orange screen with black text lettering. Radio station name in 3mm high lettering; high capacity battery provides up to 40 hours of use. With the radio turned off, a complete charge will take 10 hours; up to 20 preset radio stations; is compatible with iPod, CD player or minidisk by connecting to the Move's speaker; FM tuner provides analogue radio where digital signal is weak and the device comes with a fold out stand for stability on the back of the unit, is fitted with a telescopic aerial and is supplied with a mains power adapter. Length: 150mm **Width:** 85mm **Height:** 26mm **Weight:** 0.37kg **Price:** £79.99 **Last updated:** 09/07/2009

Telex Communications Inc.
12000 Portland Ave S, Burnsville, Minnesota 55337, USA. Tel: +1 952 887 7498 Fax: +1 952 887 5595 Email: info@telex.com (general information); international@telex.com (enquiries outside USA) dtbooks@telex.com (DAISY Player enquiries) Web: www.telex.com

17. EzDaisy Digital Talking Book Player

The simple-to-use ezDaisy was designed to be portable, easy and have basic functions to make reading accessible for all. EzDaisy digital talking book player will play DAISY, Niso, MP3 and CDs. **Width**: 133mm **Length**: 152mm **Height**: 40mm **Weight**: 0.3kg **Ref**: EZ DAISY 301329-XXX **Last updated:** 09/07/2009

18. Professor

The Professor desktop audio system is an all-in-one player for DAISY, consumer CDs, National Library Service (NLS) and consumer audiocassettes. It features an accessible radio with voiced buttons and audible station identification. The familiar ten-key phone pad allows consumers to enter radio station call numbers, place bookmarks or surf to chapters or pages or sublevels in talking books. Each button announces its function when active. High quality speakers produce stereo sound and an earphone jack provides a private listening option. **Width**: 28mm **Depth**: 25mm **Height**: 17mm **Weight**: 2.95kg **Last updated:** 09/07/2009

19. Tutor

A portable player/recorder. Plays NLS formatted cassettes at 15/16 ips and consumer audiocassettes at 1 7/8 ips. Records both speeds in two-track format. Push buttons are identified with variable size; tactile feel and all operational controls are accessible from a single orientation. Features include alkaline battery, AC adapter operation and dual headphone listening. (Headphones included). **Last updated:** 09/07/2009

VI Electronics- 11 Mallard Way, Pride Park, Derby DE24 8GX, UK. Tel: +44 1332 226890 Fax: +44 1332 613600 Email: sales@viplayer.co.uk Web: www.viplayer.co.uk

20. VI Player

This lightweight pocket sized MP3 player has large, tactile controls with raised symbols, which makes finding each button easy. A spoken menu helps you find your way around and audio feedback lets you know what buttons you have pressed. The VI Players plays MP3, WAV and audible.com files. Other features include: facility to bookmark your position in a file so you can continue where you left off; 4GB internal memory to store files. SD card slot provides additional storage if and when it's needed; built-in voice recorder for voice notes and reminders; FM radio with auto search and save up to 10 channels; view digital photographs on the built-in 2.4 inch full color screen; supplied with earphones, 1GB SD card, USB cable, mains charger, software CD and lanyard. **Length:** 105mm **Width:** 68mm **Height:** 15mm **Weight:** 0.128kg **Price:** £175.00 exc. VAT **Last updated:** 09/07/2009

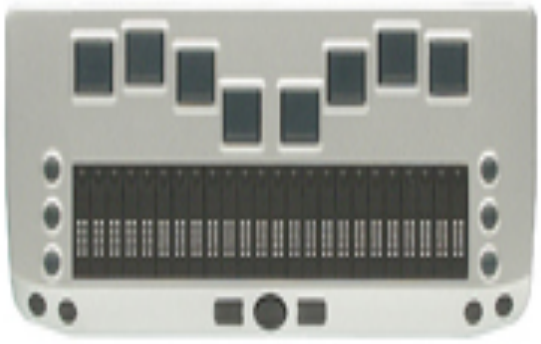
21. Super Vario

Available as a 64, 80, 32 and 40-cell braille display. The new 40-cell display is designed especially for notebooks or reading machines. Each one has universal interface options: USB, Bluetooth and serial connections. The VARIO Braille displays have always stood out by their unrivalled long battery-supplied running time: Battery running time with Bluetooth connection: approx. 25 hours; Battery running time with USB or serial connection: approx. 100 hours. In addition, the new various offer intelligent loading electronics with the use of the USB-interface: The Braille display is only loaded while your notebook is also mains-operated. When the notebook is battery-supplied, the new VARIO is automatically switched to battery operation, too. Thus the generally shorter running time of your notebook in battery operation will not be further reduced. **Last updated:** 21/07/2009

22. Vario Connect 12

Vario Connect 12 is a communication orientated, super small mini-Braille display. Whilst using the integrated 6-dot Braille keyboard together with the 12-cell Braille display you also can turn into a mobile communication professional: writing and reading SMS Text Messages and operating your mobile phone or PDA. **Length:** 130mm **Width:** 81mm **Height:** 17mm **Weight**: 0.2kg **Last updated:** 21/07/2009

23. Vario Connect 24



Vario Connect 24 is similar to the Vario Connect 12 but has a 24-cell display and a built-in 8-dot Braille keyboard. The Vario Connect 24 also offers an interface possibility through USB. **Length:** 215mm **Width:** 86mm **Height:** 18mm **Weight**: 0.42kg **Last updated:** 21/07/2009

24. Vario Pro

The navigation rollers ensure ease of use and the two different connection types (serial, USB) make the Vario Pro highly adaptable; the large selection of convenient supplementary modules provides flexibility and allows individual configuration. Vario Pro displays can be operated not only with VIRGO or BLINDOWS, but also with all other reputable screen readers.

64 Braille modules, 3 navigation rollers, thumb rollers **Length:** 459mm **Width:** 260mm **Height:** 24mm

80 Braille modules, 4 navigation rollers, thumb keys. **Length:** 561mm **Width:** 260mm **Height:** 24mm **Last updated:** 21/07/2009

Euro BRAILLE

134-140, rue d'Aubervilliers, F-75019 Paris, France. Tel: +33 1 55 26 91 00 Fax: +33 1 55 26 91 Email: boutique@eurobraille.fr Web: www.eurobraille.fr

25. ESYS 12

Esys 12 is a portable 12-cell Braille display with integrated 10 keys Braille keyboard. Multi functions and with reduced volume, it has a slot for a mini SD card to save text files becoming a useful note-taker. Navigation is either by two joysticks or two navigation wheels. Features Bluetooth technologies and specific software so it can be connected to a mobile phone or PDA. **Length:** 150mm **Width:** 86mm **Height:** 20mm **Weight:** 0.2kg **Last updated:** 21/07/2009

26. ESYS 40

40-cell braille display connects to PC by Bluetooth or USB. Works with Windows (Jaws or Jaws NT). Its memory SD CARD enables storage of up to 128 MB of data. The ESYS 40 also connects to a mobile phone or a PDA. Navigation is either by two joysticks or two navigation wheels. **Length:** 325mm **Width:** 86mm **Height:** 20mm **Weight:** 0.5kg **Last updated:** 21/07/2009

27. IRIS

IRIS is a personal data assistant, portable and compact, equipped with a 10-key Braille keyboard and a refreshable Braille display of 40, 32 or 20 cells. Other features include: Ethernet and Wi-Fi connectivity, internal flash memory, external compact flash and USB keys. Compatible with: Jaws, Supernova and Window Eyes. **Last updated:** 21/07/2009

F H Papenmeier GmbH & Co KG- Reha Division, Talweg 2, 58239 Schwerte, Germany. Tel: +49 2304 2050 Fax: +49 2304 205 205 Email: info.reha@papenmeier.de Web: www.papenmeier.de

28. Braillex Duo

Duo is a 40-cell Braille display and a Braille keyboard for PCs. The keyboard has been designed to be positioned around the Braille display. The space bars and special function keys are located in front of the

display, the Braille keys behind. The distance between the Braille keyboard and the display is only 35mm. The Duo has Easy Access Bar, a long single lever situated on the front side of the device, that allows the user to move around the screen by moving their thumb in the desired direction. **Length:** 370mm **Width:** 125mm **Height:** 26mm **Weight:** 0.9kg **Last updated:** 21/07/2009

29. Braillex EL2D-80

Two dimensional Braille display with Easy Access Bar, a long single lever situated on the front side of the device, that allows the user to move around the screen by moving their thumb in the desired direction. The display has 80 characters of Braille horizontally and a 20 cell vertical display showing the information layout of the complete computer screen. Other features include: dual routing keys integrated into the cells; connection to computer via serial port (cables provided), optionally, connection to USB port; Dos DOTS screen reader for DOS, optional for Windows (compatible with all major screen readers, Linux and OS/2); carrying case. **Length:** 657mm **Width:** 277mm **Height:** 22mm **Weight:** 2.95kg **Last updated:** 21/07/2009

30. Braillex EL-66s

Braille display with Easy Access Bar, a long single lever situated on the front side of the device that allows the user to move around the screen by moving their thumb in the desired direction. Features include: 66 slightly concave piezo-electric Braille cells with integrated cursor routing keys; very flat and light but sturdy aluminum-magnesium housing perfectly fits a regular size keyboard on top of it; data connection to the computer and power supply via USB port; alternatively, connection via serial port and power supply via separate transformer (provided); compatible with all major screen reader programs. **Length:** 470mm **Width:** 277mm **Height:** 22mm **Weight:** 2.0kg **Last updated:** 21/07/2009

31. Braillex EL-80s

Braille display with Easy Access Bar, a long single lever situated on the front side of the device that allows the user to move around the screen by moving their thumb in the desired direction. Features include: 80 slightly concave piezo-electric Braille cells with integrated double cursor routing keys; very flat aluminums-magnesium housing; data connection to the computer and power supply via USB port; alternatively, connection via serial port and power supply via separate transformer (provided); compatible with all major screen reader programs. **Length:** 569mm **Width:** 277mm **Height:** 22mm **Weight:** 2.4kg **Last updated:** 21/07/2009

32. Braillex EL-40sd

Braille display with Easy Access Bar, a long single lever situated on the front side of the device that allows the user to move around the screen by moving their thumb in the desired direction. Features include: 40 slightly concave piezo-electric Braille cells with integrated cursor routing keys; very flat and light but sturdy aluminum-magnesium housing perfectly fits a regular size keyboard on top of it; data connection to the computer and power supply via USB port; alternatively, connection via serial port and power supply via separate transformer (provided); compatible with all major screen reader programs. **Length:** 470mm **Width:** 277mm **Height:** 22mm **Weight:** 1.8kg **Last updated:** 21/07/2009

33. Braillex EL-40s

Very small portable forty cell Braille display with the Easy Access Bar, a long single lever situated on the

front side of the device that allows the user to move around the screen by moving their thumb in the desired direction. Other features include: routing keys integrated into the Braille cells, data connection to the computer and power supply via USB port, compatible with all major screen reader programs; carrying pouch and keyboard stand. **Length:** 310mm **Width:** 115mm **Height:** 22mm **Weight:** 0.89kg **Last updated:** 21/07/2009

Freedom Scientific-11800 31st Court North, St Petersburg, Florida 33716 1805, USA. Tel: +1 727 803 8000 Fax: +1 727 803 8001 Email: info@freedomscientific.com Web: www.freedomscientific.com

34. Focus Braille Displays

The Focus 40 and Focus 80 Braille Displays allow the user to navigate the Windows® environment. Focus Braille Displays are packed with features and options that can be easily configured through JAWS®. The location of navigation keys, bars and buttons promotes more economical hand movement. Choose the 40-cell Focus 40 or the 80-cell Focus 80, depending on your workstation requirements. Both models include easy-to-remember braille commands for Windows, JAWS for Windows, and braille settings. Used with the JAWS screen reader, the refreshable braille cells act as a tactile monitor that allows you to navigate and read information in dynamic braille. Both models supplied with nylon carry case and adjustable folding keyboard/laptop stand/handle.

Focus 40 **Price:** $3,895.00

Focus 80 **Price:** $7,795.00 **Last updated:** 22/07/2009

35. PAC Mate 20 Portable Braille Display

A portable display not only makes PAC Mate™ more accessible, but it also can be used with desktops and laptops. Featuring a low-cost, simple platform this 20-cell refreshable braille unit adds functionality to any computer with a USB port. With a pair of three-way Whiz Wheels for rapid navigation and dual-purpose cursor routing buttons, users can quickly and accurately obtain the information they need. The built-in Vari Braille and programmable hot keys make the PAC Mate 20 Portable Braille Display a convenient extension to any Windows or Windows Mobile operating environment. **Price:** $1,595.00 **Last updated:** 22/07/2009

36. PAC Mate 40 Portable Braille Display

A portable display not only makes PAC Mate™ more accessible, but it also can be used with desktops and laptops. Featuring a low-cost, simple platform this 40-cell refreshable braille unit adds the most manageable functionality available to any computer with a USB port. With a pair of three-way Whiz Wheels® for rapid navigation and dual-purpose cursor routing buttons, users can quickly and accurately obtain the information they need. The built-in Vari Braille and programmable hot keys make the PAC Mate 40 Portable Braille Display a convenient extension to any Windows or Windows Mobile operating environment. **Price:** $3,595.00 **Last updated:** 22/07/2009

Handy Tech Electronic GmbH - Brunnenstrasse 10, D-72160 Horb, Germany. Tel: +49 7451 55460 Fax: + 49 7451 554667 Email: info@handytech.de Web: www.handytech.com

37. Bookworm

Portable Braille reading device. Features include: 8 concavely shaped Braille cells; 2 reading keys (back, forth); menu and escape keys; 4MB memory capacity; automatic scroll mode (adjustable speed); manual mode; bookmarks; jump function; clock and alarm function. Battery capacity of 20 hours (rechargeable). The Bookworm can be used as a miniature Braille display for the PC. **Length:** 180mm **Width:** 80mm **Height:** 36mm **Weight:** 0.4kg **Last updated:** 22/07/2009

38. Braille Star 40

Compact, ergonomically optimized braille display for use with laptops. Forty concavely shaped braille cells, cursor routing, serial and USB interface. Adjustable mounting surface for different laptops. With the keyboard included, can be used as note taker. Two triple action keys, 8 function keys, battery capacity 20 hours, internal memory capacity 4MB. With the optional Bluetooth connection. Braille Star 40 can be used with a variety of screen reading products for different operating systems like Windows 95/98/2000/NT/ME/XP/XPP, Linux and DOS. **Height:** 24mm **Width:** 331mm **Depth:** 227mm **Weight:** 1.4kg **Last updated:** 22/07/2009

39. Braille Star 80

Braille display with 80 concavely shaped, piezo-electric braille cells. Combined with a PC keyboard, it can be used stand alone to take notes. The keyboard can be placed directly on top of the Braille Star 80. Features include: 80 cursor routing keys; 2 switchable external keyboard-inputs; USB and serial ports; 4MB text memory; 2 extended up/down keys; 2 triple action keys; 8 function keys. **Height:** 24mm **Width:** 585mm **Depth:** 245mm **Weight:** 2.55kg **Last updated:** 22/07/2009

40. Braille Wave

Extra compact Braille display with note taker. Features include: 40 concave Braille cells with routing keys; status cells can be switched on according to requirements; external keyboard can be connected; 4 MB text - memory; 11 quiet function keys with some resistance; runs 20 hours on battery (rechargeable); quick charging time (3 hours); serial port. With the optional Bluetooth connection, it is possible to connect Braille Wave wireless to the PC or by using Talks & Braille with mobile phones. **Height:** 35mm **Depth:** 120mm **Length:** 360mm **Weight:** 1kg **Last updated:** 22/07/2009

41. Easy Braille

Easy Braille is a fully functional Braille display that connected via USB to a PC. Easy Braille is equipped with 40 piezoelectric Braille elements. Each of these elements is equipped with a cursor-routing key. Easy Braille also offers two navigation keys and 8 function keys. The layout of the function keys allows them to be used for Braille input. Also available as a Bluetooth connection. **Length:** 305mm **Width:** 90mm **Height:** 29mm **Weight:** 0.7kg **Last updated:** 22/07/2009

42. Braille Connect 12

Available as a 12 or 40 cell refreshable Braille display. Can be used to write and read SMS text messages and operate a mobile phone or PDA. Battery life for 12 cell is 20 hours wireless, for 40 cell 35 hours Bluetooth wireless connection and 80 hours USB connection. **Length**: 130mm **Width**: 81mm **Height**: 17mm **Weight**: 0.23kg **Last updated:** 22/07/2009

43. Braille Connect 40

Available as a 12 or 40 cell refreshable Braille display. Can be used to write and read SMS text messages and operate a mobile phone or PDA. Battery life for 12 cell is 20 hours wireless, for 40 cell 35 hours Bluetooth wireless connection and 80 hours USB connection. **Length**: 310mm **Width**: 86mm **Height**: 18mm **Weight**: 0.6kg **Last updated:** 22/07/2009

44. Brailliant 24

A 24 cell refreshable Braille display that serves as a Braille terminal for a PC screen reader. Features Bluetooth, USB and serial interfaces. 25-30 hour battery life with Bluetooth connectivity, 100-hour battery life when connected via USB. **Length**: 208mm **Width**: 70mm **Height**: 20mm **Weight**: 0.38kg **Last updated**: 22/07/2009

45. Braillant 32

A 32 cell refreshable Braille display that serves as a Braille terminal for a PC screen reader. Features Bluetooth, USB and serial interfaces. 25-30 hour battery life with Bluetooth connectivity, 100-hour battery life when connected via USB. **Length**: 260mm **Width**: 70mm **Height**: 20mm **Weight**: 0.48kg **Last updated**: 22/07/2009

Nippon Telesoft Co Ltd- Hanzomon MK Building, 1-8-1 Kojimachi, Chiyoda-ku, Tokyo 102-0083, Japan. Tel: +813 3264 0800 Fax: +813 3264 0880 Email: telesoft@telesoft.co.jp Web: www.nipponteleSoft.com/english.html

46. Seika

40 cell, 8-dot display capacity. Lightweight and compact for easy of carrying. Four cursor keys are located on front of display for easier operation. Supports most major screen reading software. The USB power source connection and compact design eliminate the need for an extra adapter. Compatible with most standard PC laptop and desktop systems. **Length:** 300mm **Width:** 206mm **Height:** 35mm **Weight:** 0.6kg **Last updated:** 22/07/2009

Sensotec NV - Gistelsteenweg 112, B-8490 Varsenare, Belgium. Tel: +32 50 39 49 49 Fax: +32 50 39 49 46 Email: info@sensotec.be Web: www.sensotec.be

47. Euro Scope CE 20

Note taker with Braille keyboard and Braille and speech output (20 characters display). Word processor, calculator, and email and surf the Internet. Personal organizer for calendar addresses and notes. Media player. Use the Braille keyboard to input Braille or attach by USB to standard computer keyboard. Uses the latest Real Speak Solo voices in two languages. Further languages available on request. **Length:** 140mm **Width:** 225mm **Height:** 28mm **Weight:** 0.6kg **Last updated:** 22/07/2009

48. **E-Z Form**

Vacuum forming machine with a range of platens up to 279 x 292mm. Maximum forming area is 25mm less than each dimension of sheet. Sheet sizes are same as frame and platen sizes. Operates from 110/220 volts or 50/60 Hz supply. **Length:** 890mm **Width:** 410mm **Height:** 410mm **Price:** From $2,545.00 **Last updated:** 06/05/2008

49. **Maxi-Form**

Vacuum forming machine with a maximum forming area of 317 x 438mm. The larger forming area lends itself to maps, signs, graphs, charts and innovative teaching aid production. The Maxi-Form can be used with an interchangeable 279 x 292mm frame when standard Braille duplication is required. Operates from 110/220 volts or 50/60 Hz. **Length:** 940mm **Width:** 600mm **Height:** 410mm **Price:** From $3,450.00 **Last updated:** 06/05/2008

Asian Power Cyclopes - Rochipura, Majra, Dehradun 248171, India. Tel: +91 135 2620488 Email:

paritoshgulati@yahoo.com; asian@nde.vsnl.net.in Web: www.asianpowercyclopes.com

50. Braille Platen Press GPB3

The flat-bed press is for printing books and journals. Printing output: 1000 - 2500 cycles/hour. **Length**: 2050mm **Width**: 1775mm **Height**: 1835mm **Weight:** 3800kg **Ref:** 00 61004 **Price:** Contact manufacturer **Last updated:** 07/05/2008

51. Marburg Rotary

Sheet rotary embossing machine for mass production of Braille periodicals and books. Embossing volume of 28000 pages/hour (approximately 7000 sheets/hour). Uses paper from a roll. Character sizing: large print dot spacing 2.7mm, medium print dot spacing 2.5mm. **Weight:** 770kg **Ref:** 00 61000 **Price:** Contact manufacturer **Last updated:** 07/05/2008

52. Puma VI Marburg Embossing Machine

Computerized Braille stereotype for on-line operation with a serial interface. Embossing speed 18 characters per second. Interdot and interline embossing, 6 and 8 dot Braille, 2.5mm or 2.7mm dot spacing. Full graphics capability with smooth arcs and lines. Electronic auto-correction system verifies that the embossed sign is identical to the sign sent from the PC. For plate embossing. **Weight:** 282kg **Ref:** 00 55000 **Price:** Contact manufacturer **Last updated:** 07/05/2008

CR Clarke & Company (UK) Limited- Unit 3, Betws Industrial Park, Foundry Road, Amman ford, Carmarthenshire SA18 2LS, UK. Tel: +44 1269 590530 Fax: +44 1269 590540 Email: info@crclarke.co.uk Web: www.crclarke.co.uk

53. Braille Reproduction Machine 350

Reproduces Braille text and diagrams in 2 seconds on 0.1mm (0.004in) PVC 'Brailon' sheets. Forms the two most commonly used sheet sizes - 280 x 292mm and 280 x 216 mm. Adjustable ceramic heater system. Tactile legend plates on frequently used controls. Adjustable cycle timer and resettable copy counter. **Length:** 1140mm **Width:** 570mm **Height:** 370mm **Last updated:** 07/05/2008

Enabling Technologies1601 NE Braille Place, Jensen Beach, Florida 34957, USA. Tel: +1 772 225 3687 Fax: +1 772 225 3299 Email: info@brailler.com Web: www.brailler.com

54. PED-30

Creates zinc master plates from computer for commercial press braille. Features include: 40 characters per second; 40 cells per line and 30 lines per page; 6 dot Braille cell; serial port; single-sheet feed. **Weight**: 692.4 kg **Last updated:** 07/05/2008

Index Braille - Hantverksvägen 20, PO Box 155, S-954 23 Gammelstad, Sweden. Tel: +46 920 20 30 80 Fax: +46 920 20 30 85 Email: info@indexbraille.com Web: www.indexbraille.com

55. 4X4 PRO

4X4 PRO is a double-sided embosser for magazine format. Embossed documents are ready for immediate use after folding and stapling. The 4X4 PRO is made for mass production of braille. Printing speed 95 characters per second, USB, Network (TCP/IP), Centronics and serial interface, text buffer 100 pages, multicopy capability. **Length**: 560mm **Width**: 180mm **Height**: 430mm **Weight**: 13.8 kg **Ref**: 1352 **Price**: €4195.00 **Last updated:** 07/05/2008

56. Acoustic Cabinet 4X4 PRO

An Acoustic Cabinet is an optional part of the 4X4 PRO. It reduces the noise level to the standards of an office environment and serves to ensure stable paper handling. The integrated fan reduces the embosser working temperature. Acoustic Cabinet 4X4 PRO 17" is designed for a maximum paper size of length 460mm. **Length**: 510mm **Width**: 690mm **Height**: 152mm **Weight**: 46 kg **Ref**: 1262 **Price**: €1095.00 **Last updated:** 07/05/2008

Sparsh Products - 151-5 Rajpur Road, Dehradun 248 001 (U. A.), India. Tel: +91 135 309 9873 Fax: +91 135 265 0944 Email: info@sparshproducts.com Web: www.sparshproducts.com

57. Sparsh Forming Machine (Thermoforming)

For duplication work of Braille and raised figure material on braillon (PVC) sheets. Available in standard size of 280 x 290mm. Machine can be made available in different sizes on order. Braillon sheets are available to be used with the Sparsh Forming Machine. **Price:** US$1,232.00 **Last updated:** 07/05/2008

- **Braille Writing Devices**

This section covers devices that allow a blind or partially sighted person to write braille onto paper or plastic sheets, in a similar fashion to how a typewriter works. The best-known braillewriter is the Perkins Braille.

58. Braille Shorthand Machine

Writes on 1" wide roll of paper tape in 6-dot braille. Capable of operation at 140 words per minute. **Ref**: TD1S10 **Price:** Rs.5000.00 **Last updated:** 07/05/2008

Asian Power Cyclopes - Rochipura, Majra, Dehradun 248171, India. Tel: +91 135 2620488 Fax: +91 135 2620961 Email: paritoshgulati@yahoo.com; asian@nde.vsnl.net.in Web: www.asianpowercyclopes.com

59. **Braille Typewriter**

Typewriter for producing braille material. **Price:** US$1,200.00 **Last updated:** 07/05/2008

- **Elotype 4E**

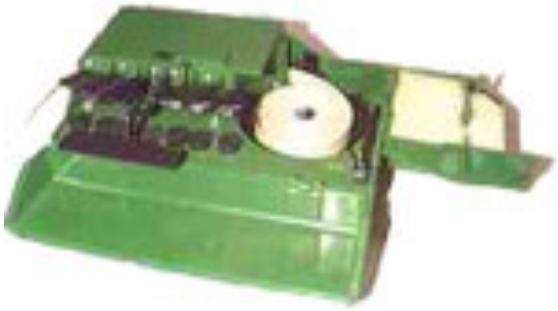
This electronic writer offers the comfort of a modern text processing system in an attractive and ergonomic design, featuring the new four-pin synchronous embossing head. All the functions of a good typewriter are available; e.g. tabulator, margin release, variable line spacing, an Editor with a battery-backed memory which allows to store and edit documents. Passages of text can be deleted, inserted and overwritten. The text memory is organized in 25 pages with 30 lines each and 40 characters per line. The machine can write six/eight-dot braille. Acts as a braille input system for your PC. A sighted person can read simultaneously on a PC-screen what a braille user is typing on the braille keyboard of the connected Elotype 4E and through connection of a standard PC keyboard can turn typed text into braille. Acts as a braille output system. Via the serial port the Elotype 4E can be used as a personal braille printer on the PC. Both, single sheets and fanfold paper (with tractor) are applicable. Also has a Braille-Graphics-Printout Capacity with 2 mm dot spacing. Graphics can be made by the software "Braille Graf Version 2.0", designed for Windows 9x - XP or higher, or imported via Paint, Clipart or Scanner. After converting the picture into a dot pattern by Braille Graf data's will be sent via serial cable to the Elotype 4E and printed. **Length:** 290mm **Width:** 420mm **Height:** 110mm **Weight:** 4.9kg **Ref:** 00 58001 **Price:**

€2,150.00 **Last updated:** 07/05/2008

- **Euro type E**

Light and robust portable electrified Braillewriter. Maximum of 42 Braille cells per line. 6 or 8 dot Braille, 5 tabs, 3 different line spacings, left and right margin free adjustable. **Length:** 295mm **Width:** 440mm **Height:** 110mm **Weight:** 4.9kg **Ref:** 00 54600 **Price:** €1,500.00 **Last updated:** 07/05/2008

- **Marburger Tape Printer**



Standard mechanical stenographic tape printer, which embosses on a roll of paper in Braille 6-dot system. Adjustable for high-speed writing at over 300 syllables per minute. Folds into compact plastic case. **Length:** 210mm **Width:** 130mm **Height:** 70mm **Weight:** 1.2kg **Ref:** 00 56000 **Price:** €538.00 **Last updated:** 07/05/2008

60. **Erika Picht**

Used for writing on one side of paper using the Braille 6-dot system (also available using the 8-dot system). This machine uses a simple paper roller mechanism that makes typing fast and quiet. Comes in

an imitation leather case. **Length:** 390mm **Width:** 220mm **Height:** 95mm **Weight:** 2.8kg **Ref:** 00 66700 (6-dot system); 00 66704 (8-dot Braille system) **Price:** €389.00 (6-dot system); €467.00 (8-dot system) **Last updated:** 07/05/2008

Howe Press of Perkins School for the Blind - 175 North Beacon Street, Watertown, Massachusetts 02472, USA. Tel: +1 617 924 3490 Fax: +1 617 926 2027 Email: Howepress@perkins.org Web: www.perkins.org

- **Large Cell Electric Perkins Brailler**

The braille cell on this machine is enlarged to provide more space between the dots, allowing persons with tactile problems to read and produce braille. Includes dust cover, felt pad and wooden eraser. **Price:** $1,050.00 **Last updated:** 08/05/2008

- **Large Cell Perkins Brailler**

The braille cell on this machine is enlarged to provide more space between the dots, allowing persons with tactile problems to read and produce braille. Includes dust cover and wooden eraser. **Price:** $790.00 **Last updated:** 08/05/2008

- **Light Touch Electric Blue Perkins Brailler**

The Light Touch Electric Blue enables braille writing with much less force for longer periods of time. Perfect for students, the Electric Perkins Brailler is approved by UL and CSA. A felt pad is included with each new machine. Includes dust cover, felt pad and wooden eraser. **Price:** $970.00 **Last updated:** 08/05/2008

- **Braille Key**

The Port set Braille Key provides an easy and simple solution for adding a Braille keyboard to a personal computer or laptop. Braille Key is connected to the USB port and is self registered by the operating system. The 9 keys are arranged in a group of 6 standard Braille input keys in a line, with space, backspace delete and new line keys ergonomically located below the Braille keys. Dot 7 is produced by the new line key providing a shifted character set. Braille Key provides either Universal computer Braille or UK computer Braille as ASCII characters into any application as well as being a direct interface to Braille devices such as printers. A selector switch on the underside allows selection of either UK International or US Universal computer Braille. **Length**: 220mm **Width**: 111mm **Height**: 40mm **Price:** £130.00 **Last updated:** 21/05/2008

- **Braille Key G2**

Provides Grade 2 Braille input to a personal computer or laptop. Not only are there the principal Braille keys but also additional keys provide full cursor control, Ctrl and Alt functions. There are also corded functions such as TAB, ESC and Grade 1 Braille. Braille Key G2 is connected to the USB port and is self registered by the operating system. The 6 Braille input keys are arranged in a standard Braille line, with space, backspace delete and new line keys ergonomically located below the Braille keys. A further lower line of keys provide on the left side, Ctrl and Alt, while on the right side is a cluster of 4 keys giving full cursor control. Corded functions are provided by incorporating the space bar with a key combination. For example letter A is produced by key 1 and space together. The ESC or Escape key is key 4,5,6 and space together. **Length**: 220mm **Width**: 111mm **Height**: 40mm **Price:** £235.00 **Last updated:** 21/05/2008

Quantum Technology - 5 South Street (Cnr Euston), Rydalmere, New South Wales 2116, Australia. Tel: +61 2 8844 9888 Fax: +61 2 9684 4717 Email: info@quantumtechnology.com.au Web: www.quantumtechnology.com.au

- **The Jot a Dot**

The Jot a Dot is a low cost, pocket-sized mechanical braille-writing device enabling regular Braille writing from the left hand side of the page to the right, a major advance in simple manual Braille writing. Direct six key Braille entries - for fast & accurate Braille. Uses tactile indicators to find the current cell and line of Braille. **Length**: 205mm **Width**: 110mm **Weight**: 350g **Ref**: 008-001 **Last updated:** 08/05/2008

- **Mountbatten Learning System**

The Mountbatten Learning System (MBLS) has been designed for children who need braille. It is a fun and inclusive introduction to braille literacy and provides a solid foundation for a lifetime of learning. It is suitable for the very first stages of Braille instruction through to high school and beyond. Features include: Correcting and Erasing, Variety of paper types can be used; Ergonomically designed keyboard; Page formatting; Writing to memory; Graphics mode and one-handed mode; Digitized speech; Assignable function keys; Synthetic speech and Note-taker (including editing), file transfer to and from PC. Memory size (kilobytes), 400; Memory size (Braille pages) 600.

- **Tatrapoint Adaptive**

Tatrapoint is mechanical six- key Braille typewriter. Every model comes with adjustable left and right margins; bell is 5 cells before the end of the line. Dymo tape holders (clips) are fixed on carriage. Carriage release key, backspace key, reading table. Adjustable keyboard allows alteration of the distance between keys. Tatrapoint Adaptive comes in two sizes: 34 characters per line and 40 characters per line, two colors: red or blue and is supplied with either a briefcase or backpack storage bag. **Last updated:** 08/05/2008

- **Tatrapoint Standard**

Mechanical six-key Braille typewriter. Every model comes with adjustable left and right margins; bell is 5 cells before the end of the line. Dymo tape holders (clips) are fixed on carriage. Carriage release key, backspace key, reading table. The keyboard is for both hands but also available for single left or right handling with adjustable length of central key (unimanual). Supplied with a briefcase storage bag. **Last updated:** 08/05/2008

Ash Technologies Ltd - B5, M7 Business Park, Naas, Co. Kildare, Ireland. Tel: +353 45 88 22 12 Fax: +353 45 88 22 14 Email: info@ashtech.ie Web: www.ashtech.ie

- **Eclipse Scholar**

The Eclipse is a 15" CCTV reader that is simple to set up and use. It comes fully assembled so all you need to do is place the unit onto a desk, plug it in and switch it on! The Eclipse has an extensive feature list that includes an auto focus camera and a push-button overview. Text and background colors can change to suit your needs while line markers and adjustable blanking combine to make reading an altogether more enjoyable experience. When you are finished reading, the display screen can be folded down. The unit also folds away easily for storage and transport. The Eclipse Scholar comes equipped with a distance camera capable of 3x-50x electronic zoom magnifications making it ideal for use in the classroom. **Last updated:** 09/05/2008

- **Liberty Scholar**

Combines the Liberty Solo hand held camera, which simply plugs into a portable tilt-angle flat screen TFT display to provide either a 12" viewing area. Camera can be rolled flat across viewing surface (with maximum 40X magnification) or placed in a writing stand (with maximum 7X magnification.), with a distance camera that can work in conjunction with the mouse camera and also on its own. 3 hours battery life. Also comes with line marking and color select. Units come with either a canvas backpack or a hard sided briefcase. **Last updated**: 09/05/2008

Clarity - 6776B Preston Avenue, Livermore, California 94551, USA. Tel: +1 800-575-1456 Fax: +1 925 449 2605 Web: www.clarityusa.com

- **Clarity Flex mate**

Flex mate features Clarity's unique auto focus for smooth, hands-free focusing. The rotating camera design offers crystal-clear viewing at any range from close-up to far away. Switching from near to distant viewing is quick and easy with Flex mate's tilt feature. Magnifies 2 - 60x. Includes camera, arm (standard or mini), remote, clamp mount, carry bag, distance lens, quick release and optional XY table. **Price**: $2045.00 **Last updated:** 09/05/2008

Human Ware - 11 Mary Muller Drive, PO Box 3044, Christchurch, New Zealand. Tel: +64 3 384 4555 Fax: +64 3 384 4933 Email: nz.info@humanware.com Web: www.humanware.com

- **Idea Solo**

Idea Solo is a practical, effective color camera, which reads information and transmits it to the user's computer screen. The image on the computer screen is then magnified to the required size. It can also be used to magnify from a distance, for example, writing on a board, so makes for a user-friendly product with both close up and distance cameras built into one. **Weight**: 1.3kg **Last updated**: 09/05/2008

LVI Low Vision International AB - Verkstadsgatan 5, S-352 46 Växjö, Sweden. Tel: +46 470 727700 Fax: +46 470 727725 Email: info@lvi.se Web: www.lvi.se

- **MagniLink U Student / Student Pro**

The ML U Student is a flexible VGA-system with autofocus. It offers the possibility of connection to a computer system and uses split screen technique between reading camera, distance camera and computer on the same monitor. The generous space under the camera facilitates writing, painting and other work with your hands. Most parts are produced in metal in order to make the system very solid and it is ideal to use in a school environment. Besides natural colors the ML U Student also features positive/negative picture with increased contrast and artificial colors. Three different positions and magnifications can be preprogrammed, which facilitates the orientation in a classroom. All functions are easily controlled from a separate control box. Magnification: ML U Student - 2.3 - 46x; ML U Student PRO - 1.4 - 46x (17" monitor). **Last updated**: 09/05/2008

- **MagniLink Student**

MagniLink Student is a portable CCTV system for connection directly to a laptop or desktop computer through USB 2.0. The combined reading and distance camera and the compact design make it ideal for use in schools, universities and offices. The user can change between the reading and distance modes by tilting the camera head. The compact size and the low weight (1.4kg), makes the Student easy to carry around and it fits well together with a laptop in a larger laptop case. All functions in the system are handled directly from the computer keyboard. In distance, or reading mode, the autofocus follows the object and the picture is automatically adjusted into sharpness. Just by pressing a button the user can store images from the camera on their computer. The user can for example make a snapshot of the blackboard and view the information when they get back home. Magnification range 1.5x - 55x (15.1" monitor). **Last updated:** 09/05/2008

- **MagniLink Student Addition**

MagniLink Student Addition is a portable CCTV for connection to a computer or directly to a monitor/TV. MagniLink Student Addition has been even further refined and improved; now the system comes with the possibility to record a video and easier short commands. The combined reading and distance camera and the compact design make it ideal for use in schools, universities and offices. **Last updated**: 09/05/2008

Optelec Tieman Group - Breslau 4, 2993 LT Barendrecht, The Netherlands. Tel: +31 88 678 3444 Fax:

+31 88 678 3400 Email: info@optelec.nl Web: www.optelec.com

- **Zoom-Flex+**

The Zoom-Flex+ allows the user to see the instructor, chalkboard or other distant activities or be utilized as a desktop video magnifier. The color CCTV magnifier with Look Function magnifies people and objects both near and far. The lightweight and compact size allows you to take the magnifier anywhere. Works on any TV. Magnification Ranges: 13" TV - 1.4 - 35x; 20" TV - 2.0 - 55x or 26" TV - 2.8 - 70x. **Weight:** 2.3kg **Last updated:** 09/05/2008

Tagarno A/S - Sandovej 4, DK-8700 Horsens, Denmark. Tel: +45 7625 1111 Fax: +45 7625 1199 Email: mail@tagarno.com Web: www.tagarno.dk

- **Cobra Flex Duo**

Ideal for both at home and work because, equipped with a TFT flat panel monitor it offers a large free desk area. Fully adjustable gas lift arm enables the camera to be easily and quickly repositioned to enable full desk coverage. Ideal for work where identification or manipulation of parts is necessary. Control panel conveniently fitted under monitor. Split screen capability. Up 85Hz refresh rate (SVGA mode). The monitor can be used to display the image from either the camera or a PC either individually or simultaneously. Additional distance viewing camera - ideal for school, College or University. Contrast adjustment. Auto focus or manual focus. Full color or enhanced mono modes. Positive or negative. Selectable foreground/background colors and adjustable reading line. **Last updated:** 09/05/2008

- **Hercules Duo**

Hercules Duo is a flexible solution for educational purposes. It is very practical because it can be used with all sizes of VGA monitors and TFT flat screens. With the new type DVP-technology (Digital Video Processing), Hercules may also be connected to a PC and work with any magnification software. It offers various split-screen options between the reading aid, PC and external camera, in addition to a triple split-screen option. The blackboard camera is easily handled by a wireless remote control. Hercules Duo features: Includes all the normal CCTV functions such as natural colors, artificial colors, high contrast, reading line and Autofocus. Flexible suspension of TFT flat panel monitor. Magnification range from 2 to 30 times at a 17" TFT flat panel monitor. Sharp and steady images. Multiple split-screen options. Smooth running X/Y reading table. Easy to operate with all controls on front panel. **Last updated:** 09/05/2008

- **Desktop Systems**

The most common type of video magnifier is intended for use on a desk or work surface, so is called a desktop CCTV or magnifier. Most desktop video magnifiers have a camera, which is in a fixed position some distance above the desktop. The printed material is placed on the reading table, which can be moved left to right and backwards and forwards.

The image is viewed on an integrated monitor and can be adjusted for contrast, magnification and color to suit the user. A few desktop video magnifiers have a camera on an angle poise type stem, instead so there is some flexibility of position. Desktop magnifiers can offer a magnification range as low as 1.5 times and as high as 60 times, although the range is usually narrower than this.

- **Eclipse**

The Eclipse is a 15-inch CCTV reader that is simple to set up and use. The Eclipse has an extensive feature list that includes an auto focus camera and a push-button overview. Text and background colors can change to suit your needs while line markers and adjustable blanking combine to make reading an altogether more enjoyable experience. When you are finished reading, the display screen can be folded down. The unit also folds away easily for storage and transport. **Last updated:** 09/05/2008

- **Eclipse Scholar**

The Eclipse is a 15" CCTV reader that is simple to set up and use. It comes fully assembled so all you need to do is place the unit onto a desk, plug it in and switch it on! The Eclipse has an extensive feature list that includes an auto focus camera and a push-button overview. Text and background colors can change to suit your needs while line markers and adjustable blanking combine to make reading an altogether more enjoyable experience. When you are finished reading, the display screen can be folded down. The unit also folds away easily for storage and transport. The Eclipse Scholar comes equipped with a distance camera capable of 3x-50x electronic zoom magnifications making it ideal for use in the classroom. **Last updated:** 09/05/2008

Assist Vision - 1-6-11 Takatsukasa, Takarazuka, Hyogo 665-0051, Japan. Tel: +81 797 74 2206 Fax: +81 797 73 8894 Email: info@assistvision.com Web: www.assistvision.com

- **Neo**

Neo allows magnification from 2x to 50x on a 14" TV monitor and up to 75x on a 20" TV monitor. Also the wide range contrast and brightness controls allow you to distinguish even the smallest details. Writing has never been easier with Neo´s large and sturdy workspace and choice of light settings to reduce shadows. The table can also be adjusted to increase or decrease the tension for easier movement. Neo gives you the flexibility to choose between 3 different viewing modes - full color, black and white and reverse, as well as continuous or one touch auto focus depending on your needs. Simple, easy to use control panel, with both tactile and color-coded controls **Last updated:** 09/05/2008

Axos - 124 Boulevard De Verdun, F-92411 Courbevoie Cedex, France. Tel: +33 1 4789 8305 Fax: +33 1 4789 9142 Email: bv@axos.eu Web: www.axos.eu

- **Flex 'Easy**

Desktop CCTV with flexible arm enabling the camera to be moved closer to the material to be viewed. Camera can be moved left or right. Able to connect to TV or PC monitor. Features autofocus and zoom, enables viewing in color, black or white and positive and negative. Magnification range is 1 - 83x depending on size of screen. **Weight**: 1.3kg **Ref**: 8430 **Last updated**: 13/05/2008

- **Zoomax Visu**

Desktop CCTV, which can be, supplied with either a 17" or 19" LCD screen. Motorized color or black and white camera. Autofocus. Positive and negative views. Can freeze the image on screen. Accepts large format documents (e.g. newspapers). Magnification range is from 1.7 - 70x depending on screen size. **Weight**: 4kg **Ref**: 8318 **Last updated:** 13/05/2008

BAUM Retec AG - Schloss Langenzell, D-69257 Wiesenbach, Germany. Tel: +49 6223 49090 Fax: + 49 6223 490999 Email: info@baum.de Web: www.baum.de

- **Video Light**

Video Light's major features are: Supporting arm for camera and lamp, with a table clamp for mounting the unit on the side of a table; Powerful halogen lamp for improved lighting; Color camera – fully

rotatable to allow pointing either at the user, downwards or forwards, e.g. for looking at a blackboard using the zoom-function; Control panel, rotatable for comfortable use, with connectors for power supply, a color monitor or TV (via converter), and a foot switch for hands-free zooming operation and (if required) PC monitor feed-through; and a XY-sliding-table for easy movement of reading matter when no table clamp is used (optional). **Last updated:** 09/05/2008

- **Visio PC**

Compact low vision work station - The camera is motor driven, hence the space normally occupied by the reading table is considerably reduced; By using a modern flat display connected to the camera, no space is needed for the monitor. Features include: Display - 18" TFT flat monitor with high contrast. The diagonal viewing area corresponds to a conventional 21" monitor. Alternatively, 15" TFT flat display with diagonal viewing area corresponding to a conventional 17" monitor; Resolution - 1280 x 1024; Contrast - 300:1; Angle - 140° h 140° v; Possible adaptations - height about 30 cm, Inclination of the monitor +/- 20°; Distance - around 12 cm; Camera - high-resolution Sony color camera with a 25-fold zoom, manual and automatic focus, full color, false colors and black & white adjustable; Magnification - 2x to 50x; Screen splitting - any splitting of the screen between the camera image and the PC image is possible; Operation - adjustments are made through a special keyboard, keyboard and optional pedal, manual and programmable automatic camera movement; Options: motor driven room camera, e.g. for training facilities. **Last updated:** 09/05/2008

Clarity - 6776B Preston Avenue, Livermore, California 94551, USA. Tel: +1 800-575-1456 Fax: +1 925 449 2605 Web: www.clarityusa.com

- **Clarity Deskmate**

For the student who wants to travel from classroom to classroom with minimal equipment, the Clarity Deskmate system offers a high-quality mobile video magnification solution. Magnifies 2 - 50x. Deskmate combines Clarity's Flex video magnifier with a 15" monitor for excellent visibility. Other features include: True Auto-focus; four simple controls: power, mode, contrast and zoom; advanced modes: line markers, manual focus override, lighting adjustment; quick release for increased add-ons; mode and mid magnification memory; View three dimensional objects with ease; variable contrast control; color, black

and white, and inverse modes for your reading comfort; first-class resolution and remote control. **Weight**: 4.9kg **Price**: $2695.00 **Last updated:** 09/05/2008

- **Clarity Flex mate**

Flex mate features Clarity's unique auto focus for smooth, hands-free focusing. The rotating camera design offers crystal-clear viewing at any range from close-up to far away. Switching from near to distant viewing is quick and easy with Flex mate's tilt feature. Magnifies 2 - 60x. Includes camera, arm, remote, clamp mount, carry bag, distance lens, quick release and optional XY table. **Price**: $2045.00 **Last updated:** 09/05/2008

- **Discovery**

Ideal for magnification include reading, writing, and other close-up tasks. Discovery features Clarity's easy to use controls for smooth, easy focusing, contrast adjustment, and a one touch power switch. The Discovery video magnifier fits comfortably in any home or office. Discovery's monitor tilt feature allows you position the super sharp 17" high contrast LCD screens for optimal viewing. **Last updated**: 09/05/2008

Enhanced Vision Systems - 5882 Machine Drive, Huntington Beach, California 92649, USA. Tel: +1 714 374 1829 Fax: +1 714 374 1821 Email: evinfo@enhancedvision.com Web: www.enhancedvision.com

- **Acrobat**

The Acrobat's innovative rotating camera design enables people with low vision to perform daily tasks more effectively. By rotating the camera, the user can read, write, self-view, and magnify images at any distance. This Full Color, Auto-Focus Acrobat has the most versatile and flexible arm available. Other features include: True mirror image; Automatic memory; Detachable camera; Up to 72X magnification; Battery operated option; Auto-Focus; 7 viewing modes; Horizontal line markers; Dual keypad; Remote control; Focus lock; Object locator and Laptop PC compatibility (additional hardware required). **Last updated:** 09/05/2008

- **Merlin**

The Merlin is a full-color, auto-focus, desktop video magnifier. Features include: Auto Focus; Tactile controls; Brightness control; True to Life Picture Quality; Fully assembled one piece unit; Built-in controls that move with the screen; Screen pivots, tilts and swivels in all directions; Features an integrated 17" or 19" flat panel monitor; Provides clear crisp images with the highest resolution quality; Computer compatible switches between CCTV & computer modes (optional accessories required); Four viewing modes with five programmable digital color select modes; 2.7 to 58x magnification (may vary with display size); Raise and lower screen for optimal height and 8 MS response rate with true/vivid color. **Last updated:** 09/05/2008

Human Ware - 11 Mary Muller Drive, PO Box 3044, Christchurch, New Zealand. Tel: +64 3 384 4555 Fax: +64 3 384 4933 Email: nz.info@humanware.com Web: www.humanware.com

- **MyReader2**

MyReader2 is an auto-reader for people with low vision. It can take images of book or magazine pages and rearrange the text onscreen. Zoom functions make navigation easier. Other features include: CCTV magnifier-type "live" magnification; Navigate pages and re-formats text on-screen; Automatic scrolling with pause and re-start; Built-in 15" screen, adjustable height and tilt; Folding unit with carry handle; Share monitor with a PC, including split-screen display; Easier controls to read the way you want to; Better page segmentation for flowing text smoothly onscreen; Better page contrast for newsprint and other lower- quality paper; Multi-page storage, up to 10 dynamic pages and 3 reference pages. Folds down and becomes portable. **Last updated:** 09/05/2008

- **Smart View 7000**

Sleek, modern ergonomic design with mobile monitor for maximum flexibility, comfort and convenience. View objects in brilliant full color or in high contrast black and white. Enjoy crystal clear display of images with a fully auto focus system. Simply push a button and the "pre set magnification control" will instantly reset itself to one of two magnifications sizes that have been set. Use the hand held zoom control to increase and decrease the size of the object on the screen and to change magnification settings. Choose a standard monitor or an optional space saving flat screen, slim line monitor and select the size of monitor to suit – or use an existing computer monitor or TV. View reading material from one of sixteen coloured background/foreground combinations in the contrast best suited to vision requirements. Use the enhanced photo-viewing mode to view color photos, illustrations, plans and other images. All controls are located in the front panel of the Smart View and are designed to be intuitive and easy to use. The reading table allows for movement in every direction making it simple to view any object. 2.3x - 44x magnification range. **Height**: 370mm **Width**: 355mm **Depth**: 460mm **Weight**: 9kg **Last updated:** 09/05/2008

- **Smart View Xtend**

One base model that can be easily upgraded by choosing any of the Smart View Xtend modules. Modules include: Flat out better viewing - A flat screen monitor is fitted to the Smart View Xtend by an ergonomically designed arm. The Smart View Xtend offers accurate & flexible color pictures. Simple preset magnification - set and returns to a favorite magnification setting. Lines and blinds - guides around the page and removes distracting clutter. Enhanced page locator - easier document navigation. Precise zoom control - allows setting of the zoom level. Clearly marked buttons - easy to recognize symbols. Each button has only one primary function. Magnification from 3x - 68x depending on size of screen. **Height**: 268mm **Width**: 355mm **Depth**: 450mm **Weight**: 12.2kg **Last updated:** 09/05/2008

Lace Electronica srl - Via Zoe Fontana, 220 - 00131 Roma, Italy. Tel: +39 0641294591 Fax: +39 0641230015 Email: info@lace.it Web: www.lace.it

- **Galileo**

Black and white 14" reading and writing aid. Features include: Magnification up to 40x; Brightness, contrast, zoom and focusing controls; Reverse reading modes (black on white and white on black). Optional accessories: External CCD camera; Lifting camera. **Length:** 380mm **Width:** 450mm **Height:** 550mm **Weight:** 11kg **Ref**: LA 700 027/00 **Last updated:** 12/05/2008

LVI Low Vision International AB - Verkstadsgatan 5, S-352 46 Växjö, Sweden. Tel: +46 470 727700 Fax: +46 470 727725 Email: info@lvi.se Web: www.lvi.se

- **MagniLink Mira**

MagniLink Mira gives the user the possibility to choose monitors to customize vision aid according to needs and preferences. MagniLink Mira consists of a camera unit and a reading table. The monitor is easily attached to the camera unit. The parts are mounted in a couple of minutes and then MagniLink Mira is ready to use. The functions are handled with a convenient control box, which can be held in the hand or placed on the table. Magnification: 3.5 - 40x (with a 19“ monitor). **Weight**: 7kg **Last updated:** 12/05/2008

- **MagniLink Reader**

MagniLink X Reader is a reading system with an integrated 17“ screen or a 19“ widescreen. The magnification range is 2.7 - 46x for the 17" screen and 2.9 - 58x times for the 19" widescreen. Other features include: Reading table is in size A3, which makes it possible to place larger newspapers and binders on it; Friction brakes in both directions facilitate reading of columns and lines; Smooth autofocus and guiding line; Lockable focus in order to facilitate writing; Handgrip for transportation. **Last updated:** 12/05/2008

- **MagniLink Split**

MLX Split is a full color split system with autofocus and an integrated 17" TFT screen. The system can be connected to a computer. The split function can be continuously adjusted in either vertical or horizontal direction. The magnification range is 2.7 - 46x. The reading table is in size A3. **Weight**: 13kg **Last updated:** 12/05/2008

- **MagniLink Zip**

A portable desktop CCTV. Folds up to fit in the supplied carrying case. The system is available in two versions; MagniLink Zip and MagniLink Zip Black/White. It has a 17" TFT wide screen which can be tilted. Other features include: Autofocus, guiding line, positive and negative picture. Magnification range: 2.8x - 40x. Can be powered by main supply or battery. **Weight**: 8kg **Last updated:** 12/05/2008

MagniSight Inc - 3631 North Stone Avenue, Colorado Springs, Colorado 80907, USA. Tel: +1 719 578 8893 Fax: +1 719 578 9887 Email: info@magnisight.com Web: www.magnisight.com

- **Colourama 5**

Desktop unit magnifying text from 1.7 to 80 times, with an inbuilt 22-inch widescreen display. At minimum magnification, a full-width view of a typical (A4) magazine etc. is available without moving the tray left and right. Grey scale (photographic) or digitally enhanced picture. Positive and negative polarity. Automatic focus. Full-color setting (full-color model only). Two models: "5" with fewer features and controls than "5+". 10 combinations of contrast colors ("5+" model only). Speech assistance (5+ model only). Focus lock (5+ model only). Picture masking (blinds): horizontal and vertical, all adjustable (5+ model only). Computer input with foot pedal switching (5+ model only). Solid-state illumination. Optional light-shielding curtain for users who are particularly sensitive to glare. Tray travel allows

viewing of documents greater than A4 size, at all magnifications, without needing to reposition the document on the tray. Familiar TV-style controls, all soft-touch rotary (no click switches). Very slim line design positions the LCD display at the ideal height for viewing. The display tilts slightly back or forwards. **Weight**: 11kg **Price:** A$2550.00 **Last updated:** 15/05/2008

Optelec Tieman Group - Breslau 4, 2993 LT Barendrecht, The Netherlands. Tel: +31 88 678 3444 Fax: +31 88 678 3400 Email: info@optelec.nl Web: www.optelec.com

- **Clear View+ Series**

Clear View+ has been designed with the one-button control system that allows you to increase or decrease magnification and change from photo mode to black and white, as well as reverse. Magnification range: 2.5 - 56x depending on screen size. Available with 17", 19" or 22" flat screen or 17" CRT monitor. Other features include: Always-In-Focus™ technology insuring crisp clear focus on every image. Adjustable monitor arm allows the user to position the monitor for optimal viewing and comfort. Fully adjustable brightness. Easy-Glide reading platform with electronic brake. **Last updated**: 12/05/2008

REHAN Electronics Ltd - Industrial Estate, Courtown Road, Gorey, Co. Wexford, Ireland. Tel: +353 55 22013 Fax: +353 55 20732 Email: sales@rehanelectronics.ie Web: www.rehanelectronics.ie

- **Affinity Series**

These CCTVs are available as Basic Models (supplied without monitor) and the Supreme Models (which include the specially designed 17" Affinity Full Color Monitor). All models can be supplied with VGA option, which offers connection between a computer and a computer VGA monitor. Have the "switch" screen feature to switch between PC image and Affinity camera image. Can (without the use of a

computer) be connected to a stand-alone external normal VGA monitor or TFT (LCD) VGA monitor. Can be connected to a VGA projector. All models have DUAL Auto focus: Continuous & One-Touch Instant. A magnification range from 2.1x upto 62x depending on the External monitor size. Magnification range 3x upto 48x on the Supreme 17" monitor. Use a 16x electrical controlled zoom lens. Use the Ultra Long Life Bright LED illumination. Use a TEXT mode with sophisticated contrast modulator for improved text mode. Positive/Negative text mode. Selectable background/foreground color combinations in text mode. Blanking & underlining for improved ease of reading. Smooth running, extra large table with full-featured brake system. 60Hz CCD camera and second camera option with "switch" screen feature. **Last updated:** 12/05/2008

- **ERGO Series**

The ERGO model consists of three separate parts: (1) A removable monitor, which can be adjusted to different height levels. (2) A Reading table. When used together with the floor stand, the reading table can be adjusted to different height levels. (3) Stand; floor or table option. A selection of monitors: ERGO-75. Black & White 75Hz, ERGO-MC. Multi Color 75Hz or ERGO-FC. Full Color 75Hz. Other features on all models include: High resolution CCD camera with high speed reading. Bright, high quality zoom lens with a very high depth of field. Two PL-Lamps to the left and right underneath the monitor for reducing the effect of shadows and giving balance. On/Off switch on the front of the monitor. Zoom knob, magnification from 3.5x upto 35x. Focus knob. **Last updated**: 12/05/2008

Tagarno Innovision A/S - Sandovej 4, DK-8700 Horsens, Denmark. Tel: +45 7625 1111 Fax: +45 7625 1199 Email: mail@tagarno.com Web: www.tagarno.dk

- **Cobra**

The Cobra camera has a fully automatic focus (can be switched to manual) and full color. Writing underneath the camera, reading books, viewing mobile phone screens are all simple to do! It is portable and folds flat meaning it can fit into carry bags. All controls are via a tactile wireless remote control unit. Split Screen capable. There are 4 split screen modes that retain your selected positions enabling optimum usage of both the camera and a computer on the same screen at the same time. Many selectable foreground and background colors to enhance reading of text. Magnification range x2 to x30 on 17" TFT

screen. **Weight**: 3kg **Last updated:** 12/05/2008

- **Cobra Flex**

Ideal for home or work - equipped with a TFT monitor it offers a considerable space saving over more conventional CCTVs. The Cobra Flex, with the new Digital Video Processing (DVP) technology may display the output of the camera or your PC either independently or simultaneously. Features: Fully adjustable gas lift arm enables the camera to be easily and quickly repositioned to enable full desk coverage. Ideal for work where identification or manipulation of parts is necessary. Control panel conveniently fitted under monitor. Split screen capability. Up 85Hz refresh rate (SVGA mode). Contrast adjustment. Auto focus or manual focus. Full color or enhanced mono modes. Positive or negative. Selectable foreground/background colors. Adjustable reading line. **Last updated:** 12/05/2008

- **Hercules**

Hercules is a versatile split screen CCTV that may be connected to any CRT or TFT SVGA (or higher) monitor. With the new digital video processing (DVP) technology, Hercules may be connected to a PC and work with any magnification/speech software. The split screen function allows the monitor to display the output from the camera or the computer or to display the images simultaneously. Features: Wide magnification range from x2 to x30 on a 17" (viewable area) monitor. Easy to operate all controls on front panel. Auto focus or manual focus. Full color or enhanced mono modes. Selectable foreground/background colors. Adjustable reading line. Up 85Hz refresh rate (SVGA mode). Split screen capability. Contrast adjustment. Smooth running X/Y table. **Last updated:** 12/05/2008

- **Luna**

Luna is a small color video magnifier with a comprehensive specification. Luna is easy to operate all the controls are situated on the front panel. Positive / negative enhanced mono with choice of foreground / background colors. Features: 14" color NTSC screen. Auto focus. Positive / negative. Variable foreground / background colors. Contrast adjustment. Wide magnification range from x1.5 to x36. Smooth running X/Y table. **Last updated:** 12/05/2008

- **Vega**

The monitor may be used with the camera or a PC. The split screen function allows the monitor to display the output from the camera or the computer or to display the images simultaneously. Focus control can be set to either automatic or manual. Wide magnification range from x2 to x36. Improved full color adjustment. Easy to operate all controls on front panel. Auto focus or manual focus. Adjustable reading line. Split screen capability. Contrast adjustment. Smooth running X/Y table. **Last updated:** 12/05/2008

- **Zenith**

Zenith comes with a high-resolution 17" color screen. The high quality color system and fast refresh rate provide superb color reproduction and a stable, flicker free image. Zenith is elegantly styled and easy to operate due to the tactile knobs all fitted to the front panel. Positive / negative image reproduction in artificial colors as well as black and white. Generous distance between the X / Y table and camera enables sizeable objects to be examined. Features: Auto focus. Wide magnification range from x2 to x36. Several artificial color options. Adjustable reading line. Contrast adjustment. Smooth running X/Y table. **Last updated:** 12/05/2008

- **Aladdin Apex**

Aladdin Apex incorporates an adjustable 17" or 20" flat panel monitor with the same color and professional features you've come to rely on. With the Apex you can raise or lower the screen, bringing the image to your eye level. Or slide the screen forward and tilt to enjoy a glare-free image at your optimum reading distance. Also, the monitor folds down providing easy storage. Reading is made easy with this full-featured, integrated flat panel system. The Apex features 24 color select options, which offer high contrast. Line markers and shadow masking help track text. Additionally, continuous auto focus with manual override provides increased flexibility for your picture focus needs. The 17" screen provides magnification from 3x - 48x and the 20" screen provides 3.5x - 56x magnification range. **Ref**: GF9A-17 (17" screen); GF9A-20 (20" screen) **Price**: $2795.00 (17" screen; for U.S. only); $3195.00 (20" screen; for U.S. only) **Last updated:** 12/05/2008

- **Aladdin Classic**

CCTV with 14" (36cm) black & white monitor. Magnification range 4.5x - 50x. Can display printed materials in high-contrast black text on a white background or white text on a black background. This

system also features a large depth of field for viewing three-dimensional objects and a non-glare reading table, which permits reading heavy books. **Width:** 396mm **Depth:** 546mm **Height:** 559mm **Weight:** 16.8 kg **Ref**: AL2A **Price**: $1595.00 (for U.S. only) **Last updated:** 12/05/2008

- **Head Mounted Systems**

Head mounted systems tend to be portable video magnifiers that require the user to wear a pair of spectacles or a head mounted camera onto which the image is displayed.

- **Jordy**

Jordy enables people with low vision to see objects at a distance, up close and at any range in between. This battery-operated system can be worn like a pair of glasses or used as a Desktop video magnifier when placed on its docking stand. Requires no special fitting procedures. Other features include: 30x magnification range; Auto focus; Focus lock; Digital zoom; Four viewing modes - full color, black & white, high contrast positive & negative; Built-in lighting system; Auto focus with push button locator. **Price**: £1795.00 **Last updated:** 09/05/2008

Eyetonomy - 75 Town Centre Drive, Rochester, New York 14623, USA. Tel: +1 585 359 5900 Fax: +1 585 359 4172 Web: www.eyetonomy.com

- **Sight Mate LV920**

Sight Mate is a portable lightweight video magnifier that optimizes residual peripheral vision. Worn like eyeglasses, Sight Mate combines an integrated miniaturized camera and high-resolution technology to display images or text that the wearer can scan across and read with their peripheral vision. Features include: 2 mega-pixel camera sensor and 3x optical zoom lens. Twin high-resolution 640x480 LCD displays. AccuTilt view pivots up to 15 degress for comfortable viewing angles. Adjustable cushioned Nose Bridge. Edge / contrast detection for viewing distant objects and signs. Controller designed to connect to almost all NTSC audio/video devices with video out capacity. 15 user control buttons for feature / function selections. Battery life is approximately four hours. Provided with an aluminum attaché style case. **Price**: US$3499.00 **Last updated:** 09/05/2008

PC Compatible Systems

A few video magnifier systems will link to a PC, allowing the screen image to be shared between the video magnifier picture and the computer display. These video magnifiers are sometimes referred to as "screen sharing" or "split-screen" video magnifiers.

Ash Technologies Ltd - B5, M7 Business Park, Naas, Co. Kildare, Ireland. Tel: +353 45 88 22 12 Fax: +353 45 88 22 14 Email: info@ashtech.ie Web: www.ashtech.ie

- **OPTi Standard**

Using USB 2.0 the OPTi mouse camera connects to a laptop or desktop PC to display magnified text and images on a computer screen. Light and small it can fit into the front pocket of a laptop carrying case and provides 10 hours of reading. Fully adjustable offering 3 - 27x magnification on a standard 15" screen. Full color with a complete range of enhanced color options. View manager with ten customizable views. Operates with major screen magnifier programs. Requires Windows XP Home or Pro. **Weight**: 0.5kg **Last updated:** 13/05/2008

Axos - 124 Boulevard De Verdun, F-92411 Courbevoie Cedex, France. Tel: +33 1 4789 8305 Fax: +33 1 4789 9142 Email: bv@axos.eu Web: www.axos.eu

- **Zoomax Nomadis**

Portable camera that connects to a PC. Motorized zoom and autofocus. Camera is controlled remotely. 5 hours of battery function, rechargeable. Can view in color, black and white or positive and negative. Systems requirements: Windows 2000 or XP. **Weight**: 3kg **Ref**: 8380 **Last updated**: 13/05/2008

- **Mono Mouse USB**

Works with any desktop or notebook PC using USB 2.0 and XP or Vista. Ergonomic and easy to use. Crisp clear black and white image. Resize to change magnification. Plugs directly into any USB 2.0 port. 5 feet of easy store cable. Simple, full function utility software included. Microfibre Mouse Bag included. Software available from Bierley website. **Price:** £275.00 exc. VAT and P&P **Last updated:** 13/05/2008

Clarity - 6776B Preston Avenue, Livermore, California 94551, USA. Tel: +1 800-575-1456 Fax: +1 925 449 2605 Web: www.clarityusa.com

- **Clarity PCMate**

The Clarity PCMate connects to a laptop directly. There is no need for a power outlet. The PCMate comes with the Clarity Capture software, which allows you to capture an image and use a split screen without the need for any accessories such as a battery or separate monitor. The PCMate gets its power through the USB connection. It is extremely portable and depending on your laptop will only use a small percentage of your laptop's battery life (approximately 4% of a 72 watt hour battery). Includes camera, carry bag, stand, distance lens, quick release and remote. Minimum computer requirements: Windows Vista or XP; USB-2.0; 1GHz processor; 512 MB RAM and 64 MB Video card. **Last updated:** 13/05/2008

Enhanced Vision Systems - 5882 Machine Drive, Huntington Beach, California 92649, USA. Tel: +1 714 374 1829 Fax: +1 714 374 1821 Email: evinfo@enhancedvision.com Web: www.enhancedvision.com

- **Merlin Plus**

Merlin Plus offers the same features as the full-color Merlin CCTV. Compatible with most computer workstations. Key features include: Auto focus; Tactile controls; External control box; Multiple viewing modes; True to life picture quality; Proprietary remote software; 2.7 to 67x magnification (may vary with display size); Optional 17" or 19" integrated LCD for superior ergonomics; Split screen capability allows viewing images and computer files simultaneously; 28 custom user combinations for oreground/background; Horizontal and vertical line markers and windowing; Foot pedal allows for quick toggle and optional voice recognition (may vary with model). **Last updated:** 13/05/2008

Human Ware - 11 Mary Muller Drive, PO Box 3044, Christchurch, New Zealand. Tel: +64 3 384 4555 Fax: +64 3 384 4933 Email: nz.info@humanware.com Web: www.humanware.com

- **Idea Solo**

Idea Solo is a practical, effective color camera, which reads information and transmits it to the user's computer screen. The image on the computer screen is then magnified to the required size. It can also be used to magnify from a distance, for example, writing on a board, so makes for a user-friendly product with both close up and distance cameras built into one. **Weight**: 1.3kg **Last updated**: 09/05/2008

- **Smart View 8000**

View objects in full color or in black and white with an auto focus system. Simply plug and play – connect the 8000 to a PC and start immediately, no set up is required. The split screen allows display of images independently or simultaneously either vertically or horizontally. Use the Smart Keypad and at the touch of button can display the time, day, date and a four-function calculator in large print on the screen. Concentrate and focus on one line of text or one area of your screen at a time using adjustable vertical and horizontal line markers and blinds. Simply push a button and the "pre set magnification control" will instantly reset itself to one of two magnifications sizes that have set. View reading material from one of sixteen coloured background/foreground combinations in the contrast best suited to vision requirements. Use the enhanced photo-viewing mode to view color photos, illustrations, plans and other images. Select the size and type of monitor to suit – or use an existing computer monitor. The reading table allows for movement in every direction making it simple to view any object. All controls are located in the front panel of the Smart View and are designed to be intuitive and easy to use. 3x - 60x magnification range depending on size of screen. **Height**: 280mm **Width**: 350mm **Depth**: 455mm **Weight**: 13kg **Last updated:** 13/05/2008

Innoventions Inc - 9593 Corsair Drive, Conifer, Colorado 80433-9317, USA. Tel: +1 303 797 6554 Fax: +1 303 727 4940 Email: magnicam@magnicam.com Web: www.magnicam.com

- **Primer**

The focus-free Primer displays images in normal and either positive or negative enhanced modes, on round or flat surfaces. The Primer has a built-in roller to stabilize tracking and a one-button control making it very easy to use. The Primer, used with an ordinary 27-inch television set has equivalent magnification of 10.8 to 21.6 X, allowing you to take the next step into higher magnification without the difficulties of using high power optical magnification. With clear and steady CCD camera images, the Primer's smooth, tactile surface is easy to hold. The Primer uses a power cord that connects at either end of the unit and at your choice provides automatic switching between television viewing and magnification. The Primer is now also PC compatible. **Last updated**: 13/05/2008

LVI Low Vision International AB - Verkstadsgatan 5, S-352 46 Växjö, Sweden. Tel: +46 470

727700 Fax: +46 470 727725 Email: info@lvi.se Web: www.lvi.se

- **MagniLink Reader**

MLS Reader is a portable handheld camera for connection directly to a laptop or desktop computer. The camera features high contrast positive/negative picture and artificial colors. The magnification range for a 14" monitor is 9-22,5 times. The camera picture is presented in a Windows application and both size and position of the window can be adjusted. This allows you to work in different split screen modes and makes your system very flexible. The camera's snap shot function is very useful, just by pressing a button you can store images from the camera on your computer. All features in the system are controlled from the keyboard. The MLS Reader is compatible with all resolutions and refresh rates on your laptop. **Last updated**: 13/05/2008

- **MagniLink Student**

MagniLink Student is a portable CCTV system for connection directly to a laptop or desktop computer through USB 2.0. The combined reading and distance camera and the compact design make it ideal for use in schools, universities and offices. The user can change between the reading and distance modes by tilting the camera head. The compact size and the low weight (1.4kg), makes the Student easy to carry around and it fits well together with a laptop in a larger laptop case. All functions in the system are handled directly from the computer keyboard. In distance, or reading mode, the autofocus follows the object and the picture is automatically adjusted into sharpness. Just by pressing a button the user can store images from the camera on their computer. The user can for example make a snapshot of the blackboard and view the information when they get back home. Magnification range 1.5x - 55x (15.1" monitor). **Last updated:** 09/05/2008

- **MagniLink Student Addition**

MagniLink Student Addition is a portable CCTV for connection to a computer or directly to a monitor/TV. MagniLink Student Addition has been even further refined and improved; now the system comes with the possibility to record a video and easier short commands. The combined reading and distance camera and the compact design make it ideal for use in schools, universities and offices. **Last updated**: 09/05/2008

- **Clear View+ PC**

A video magnifier that connects directly to the PC, with the need for just one screen. Once connected, the Clear View+ PC provides three viewing options: Video magnifier image; PC image; Split-screen - dividing the screen into two, showing both video magnifier and PC images simultaneously. Other features include: Unique Picture-in-Picture facility allows you to work seamlessly. Wide magnification range for easier reading (2.6 to 50 times magnification). Simple controls at your fingertips. Auto-focus. Easy-glide, ultra-low reading table. Fix the reading table position at the press of a button. View images in full color when using a full color monitor (monitor available separately). Read paper documents using high contrast text modes: Positive mode - black-text-on-white; Reverse mode - white-text-on-black. Choice of 16 foreground and background semicolour combinations. Red dot pointer - helps you locate your place on the page when using high levels of magnification. Adjustable line markers and window blinds, providing guiding lines to make continuous reading much easier. **Price:** £2,295.00 **Last updated:** 14/05/2008

OPTRON Assistive Technologies - PO Box 5454, Morton, Illinois 61550, USA. Tel: +1 888 567 8766 Fax: +1 309 694 2077 Email: info@optronusa.com Web: www.optronusa.com

- **OPTRON pro**

The OPTRON pro is VGA computer compatible for a versatile and ergonomic integration into the electronic work environment. It also features an adjustable line reader and a built-in LED reading light. Like the Optron mobile, the Optron pro is has a modular arm, which allows running the camera at a higher and a lower position. It is equipped with Twist am technology and 360 degree distance viewing. The Optron pro comes with foam padded carrying case for easy travel and safe storage. **Last updated:** 14/05/2008

- **Blue-Eye**

Full color zoom camera with an integral wheel for easy zoom control. Ideal for reading and writing. Connects to your PC via USB connection. **Price:** £399.00 **Last updated:** 14/05/2008

- **PC-Eye USB**

Full color portable CCTV with zoom control. Increase or decrease size of text. Options to select Black and White or Color. Also negative / positive image. 10x - 30x push button magnification adjustment. Negative / Positive Black / White & Color on-off buttons. Soft touch on the book or newspaper for easy reading. Built-in 6-super bright white LED lamps. Connects to your PC via USB connection. **Price:** £499.00 **Last updated:** 14/05/2008

- **Pocket Systems**

These are pocket or handbag sized CCTVs designed to be carried around by the user at all times, and smaller than the portable systems. They are useful for reading labels in shops, notices, bills, menus and magazines whilst travelling. They usually have an integrated screen and are available for a range of magnifications.

Ash Technologies Ltd - B5, M7 Business Park, Naas, Co. Kildare, Ireland. Tel: +353 45 88 22 12 Fax: +353 45 88 22 14 Email: info@ashtech.ie Web: www.ashtech.ie

- **Quick look Zoom**

Quick look Zoom is a hand-held, portable, full color, electronic magnifier that can magnify text, photos and maps or just about anything. Magnification from 3x up to 18x in 9 steps. 5 display modes. Quick look has a built-in 109mm color monitor with enhanced contrast modes (black/white and white/black) for better readability of text. Freeze-frame an image. Camera rotates. Internal lighting can be turned off for ATMs and phones. Battery run time is approximately 4 - 7 hours. **Length:** 171mm **Width:** 95mm **Depth:** 28mm **Weight**: 0.2kg **Last updated:** 14/05/2008

Cidat-Once- Camino de Hormigueras, 172 E, Madrid 28031, Spain. Tel: +34 91 709 76 00 Fax: +34 91 709 77 Email: cidat@once.es Web: cidat.once.es

- **PortaVisor Once - PVO**

A digital hand magnifier, which enlarges images that have been obtained either by an internal camera or by other external devices on an integrated 4" monitor. The PVO only has 4 buttons that enable the user to select the view of Real Color and Inverse Color, Black and White and White and Black and to vary the contrasts of the image displayed, as well as to digitally magnify it from x6 up to x12. PVO also offers the possibility of increasing the images in the long distance with a digital zoom of x2. Incorporates a carrying case, which can be clipped to a belt as well as a strap. Requires 4 AA batteries and is also mains

adaptable. **Length**: 160mm **Width**: 90mm **Depth**: 50mm **Weight**: 0.4kg **Ref**: 031201002423699 **Last updated:** 14/05/2008

Enhanced Vision Systems - 5882 Machine Drive, Huntington Beach, California 92649, USA. Tel: +1 714 374 1829 Fax: +1 714 374 1821 Email: evinfo@enhancedvision.com Web: www.enhancedvision.com

- **Amigo**

The Amigo is simple to use - just place it directly on the material and adjust the magnification by a turn of the dial. This innovative product allows you to adjust the magnification without moving the Amigo away from the reading material. Read prices tags, restaurant menus, ingredients and directions no matter where you are with this new high-powered video magnifier. Digital magnification from 3.5 to 14X enables the user to leave the Amigo directly on reading material and adjust magnification. Large viewing screen (6.5 inches). Screen tilting function gives the user the flexibility to view images at a comfortable angle. Freeze frame allows the user to take a temporary picture. Removable standard battery with internal charger (spare battery included). 6 viewing modes (including 2 Color Select options). Writing stand and carrying case. Connects with TVs for increased magnification. **Last updated:** 14/05/2008

- **Nemo**

The pocket-sized Nemo is lightweight. Incorporating a 4" viewing screen with digital magnification - this ultra portable device can go anywhere. Features include: Anti-Glare LCD screen; 4.5 to 9x magnification; Three step digital magnification; 6 viewing modes (including 2 color select); Freeze frame control takes a temporary picture; Tactile controls allow for ease of use and three (3) hour battery life. **Last updated:** 14/05/2008

Human Ware - 11 Mary Muller Drive, PO Box 3044, Christchurch, New Zealand. Tel: +64 3 384 4555 Fax: +64 3 384 4933 Email: nz.info@humanware.com Web: www.humanware.com

- **Mono Pocket Viewer**

Designed to be truly portable. Small enough to fit easily into a pocket or handbag. Features include: Enhanced contrast mode - view an object or text in high contrast, black on white, or white on black depending on preference; Magnifies objects and text up to 7 times; Includes a built-in rechargeable battery - allowing the Pocket Viewer to be used for up to an hour and a half at a time. All mono Pocket Viewers come with carry case and AC adaptor. **Height**: 140mm **Width**: 87mm **Depth**: 35mm **Weight**: 0.3kg **Last updated**: 14/05/2008

- **Pocket Viewer**

Designed to be truly portable. Pocket Viewer's full color picture quality allows reading of maps, viewing of photographs, illustrations and three-dimensional objects. Its built-in writing stand adds increased flexibility making it possible for to sign checks and write up brief meeting notes. Enhanced contrast modes (white/black or black/white) can be selected for clear and easy reading. Pocket Viewer's features include: Full color display; 7x magnification range; Built-in rechargeable battery; Extended battery life, 2 hours continuous use; Reduced recharge time, 3 hours; Battery status indicator; Sleep mode; Compact viewing area 4" x 3"; Includes AC adaptor and carry case. **Length**: 166mm **Width**: 90mm **Depth**: 35mm **Weight**: 0.3kg **Last updated:** 14/05/2008

Optelec Tieman Group - Breslau 4, 2993 LT Barendrecht, The Netherlands. Tel: +31 88 678 3444 Fax: +31 88 678 3400 Email: info@optelec.nl Web: www.optelec.com

- **Compact+**

The Compact+ is a pocketsize video magnifier designed for the benefit of low vision people. The Compact+ offers a bright and sharp image quality. A full color, 4.3-inch wide screen offers up to 10x variable magnification, in a wide range of high-contrast viewing modes including semi-colors. The camera is located at the centre of the Compact+ providing easier positioning over reading material. With the added benefit of a collapsible handgrip, the Compact+ can also be used in the same way as a traditional handheld magnifier. With a built-in rechargeable battery life of up to 3 hours, and the facility to use standard off-the-shelf AA batteries. **Depth:** 76mm **Width:** 135mm **Height:** 300mm **Weight:** 300g **Price:** £495.00 **Last updated:** 14/05/2008

- **Traveller**

The Traveller+ provides portable magnification for those who are constantly on the go. Simply position the Traveller+ over reading material, and the built-in 16cm TFT screen will display text and images at a more comfortable size. The step less, linear zoom facility allows you to view images between 4 and 16 times magnification. The large 'plus' and 'minus' buttons of the Traveller+ allow you to take control and adjust the level of magnification that suits you, and you are not restricted to any preset zoom levels. Viewing text and images is easy using the full color mode. Also included are two high contrast text modes displaying either 'black text on a white background' or 'white text on a black background'? The powerful magnification of the Traveller+ can be used for writing as well as reading. By placing the Traveller+ in the writing or stand-up position, there is enough space underneath the camera for it to focus whilst you are writing. External lights provide a valuable source of light in dimly lit working conditions. The Traveller+ has on-board batteries, with a life of two hours continuous use. **Height**: 950mm **Width**: 180mm **Depth**: 160mm **Weight**: 0.95kg **Price:** £995.00 **Last updated:** 14/05/2008

Telesensory Corp - InSiPhil (Singapore) Pte. Ltd., 71 Bukit Batok Crescent, #05-10, Prestige Centre, 658071, Singapore. Tel: +65 63 16 5370 Fax: +65 63 16 5373 Email: info@insiphil.com Web: www.telesensory.com

- **Color Pocket Magnifier**

The Color Pocket Magnifier enables the user to view almost anything on its 3.5" screen, in full color at up to 7x magnification. Text can be viewed in enhanced negative (white on black) mode. Operates on internal batteries with up to 2 hours constant use. Supplied with charger. **Price:** £420.00 exc. VAT **Last updated:** 14/05/2008

- **Pocket Reader 2**

The Pocket Reader is lightweight, and compact, to allow users the ability to see magnified text or pictures in black and white, with up to 7x magnification, and protective leather cover. **Price:** £295.00 exc. VAT **Last updated:** 14/05/2008

- **Portable Systems**

Portable CCTVs, intended for the more mobile user, are being developed all the time. In some cases, the camera unit is portable, but a standard monitor/TV screen is required to display the image, in other cases the CCTV may have it's own small integrated viewing screen or may be connected to a laptop. Most portable video magnifiers, and many video magnifiers that use a television, have a hand-held camera similar to a computer mouse.

Ash Technologies Ltd - B5, M7 Business Park, Naas, Co. Kildare, Ireland. Tel: +353 45 88 22 12 Fax: +353 45 88 22 14 Email: info@ashtech.ie Web: www.ashtech.ie

- **Eclipse**

The Eclipse is a 15-inch CCTV reader that is simple to set up and use. The Eclipse has an extensive feature list that includes an auto focus camera and a push-button overview. Text and background colors can change to suit your needs while line markers and adjustable blanking combine to make reading an altogether more enjoyable experience. When you are finished reading, the display screen can be folded down. The unit also folds away easily for storage and transport. **Last updated:** 09/05/2008

- **Fusion**

A portable magnifier with a 7" tiltable display. This two-in-one mouse camera separates from the unit and accommodates tasks such as reading thick bound books or labelling on bottles. In addition, the mouse camera features a zoom magnification control. Continuous zoom magnification from x6 to x18. Fusion has a battery life of three hours and can be plugged into the power supply for extended use if required. **Length**: 180mm **Width**: 170mm **Depth**: 65mm **Weight**: 1.1kg **Last updated:** 14/05/2008

- **Liberty Solo**

The hand held camera simply plugs into a portable tilt-angle flat screen TFT display to provide either a 12" viewing area. Camera can be rolled flat across viewing surface (with maximum 40X magnification) or placed in a writing stand (with maximum 7X magnification.) 3 hours battery life. Also comes with line marking and color select. Units come with either a canvas backpack or a hard sided briefcase. **Weight**: 2.1kg **Last updated**: 14/05/2008

Assist Vision - 1-6-11 Takatsukasa, Takarazuka, Hyogo 665-0051, Japan. Tel: +81 797 74 2206 Fax: +81 797 73 8894 Email: info@assistvision.com Web: www.assistvision.com

- **Slider**

Select your preferred viewing mode (color, black and white or reverse) and control the desired level of contrast and magnification (from 8.5x to 17x). You can also connect the Slider to a separate TV monitor for even larger magnification. Choose to slide the unit across your favorite magazine or newspaper with the camera in one of three positions or use the detachable camera as a handheld camera to read a medicine bottle or the bind of a book. Select the best reading position by tilting the in-built LCD monitor either vertically or horizontally. For simplicity, one knob controls both the viewing mode and contrast selection. The magnification selection is found on the camera for easy control and access. Supplied with a carry case and internal battery. **Weight**: 1.9kg **Last updated:** 14/05/2008

Audio Visual Mart, Inc. - 603 Williams Blvd., Kenner, LA 70062, USA. Tel: +1 504 712 0400 Fax: +1 504 712 0032 Email: info@av-mart.com Web: www.av-mart.com

- **Power vision Portable**

Power vision™ Portable is small and lightweight enough to allow people with vision impairments to read virtually anywhere. With Power vision™ Portable, print can be magnified between 4 to 20 times actual size - and users can select between standard, high contrast and reverse image reading modes. There is even an optional color system. Power vision™ Portable is easy to carry with its custom softpak backpack. The system's high contrast 6.9inch flat screen monitor with a unique height-adjustable tilt and swivel stand make reading comfortable. All display controls are camera mounted to make adjustments quick and easy - and the Power vision™ Portable comes with a unique easy roller attachment which increases both reading and writing speed. **Last updated:** 14/05/2008

Clarity - 6776B Preston Avenue, Livermore, California 94551, USA. Tel: +1 800-575-1456 Fax: +1 925 449 2605 Web: www.clarityusa.com

- **Clarity Carry mate**

The Carry mate is an ideal compact design that will fit easily into any workspace from a desktop to a countertop. The internal rechargeable battery powers the product for over 6.5 hours. Magnifies 4 - 36x. You can use the carrying case or the attached handle for your traveling convenience. Includes: camera, carry case, 10.4 " viewing screen, distance lens, quick release, remote and battery. **Price**: $2795.00 **Last updated:** 09/05/2008

- **Clarity Deskmate**

For the student who wants to travel from classroom to classroom with minimal equipment, the Clarity Deskmate system offers a high-quality mobile video magnification solution. Magnifies 2 - 50x. Deskmate combines Clarity's Flex video magnifier with a 15" monitor for excellent visibility. Other features include: True Auto-focus; four simple controls: power, mode, contrast and zoom; advanced modes: line markers, manual focus override, lighting adjustment; quick release for increased add-ons; mode and mid magnification memory; View three dimensional objects with ease; variable contrast control; color, black and white, and inverse modes for your reading comfort; first-class resolution and remote control. **Weight**: 4.9kg **Price**: $2695.00 **Last updated:** 09/05/2008

Enhanced Vision Systems - 5882 Machine Drive, Huntington Beach, California 92649, USA. Tel: +1 714 374 1829 Fax: +1 714 374 1821 Email: evinfo@enhancedvision.com Web: www.enhancedvision.com

- **Flipper**

Flipper's rotating camera design enables people with low vision to perform daily tasks more effectively.

By rotating the camera head, the user can read, write, and view magnified images at any distance. Flipper is lightweight and can be moved easily from one area to another. Simply roll the base and rotate the camera to view the desired image. Key features include: True Color; Auto-Focus; Fully Portable; Compact (less than 7" tall); Lightweight (approximately 1 lb); Four (4) viewing modes contrast options; Distance, Intermediate and Near Viewing Capabilities; 6 to 50x Magnification (may vary with display size); Computer Compatible (additional hardware may be required); Magnify images on any surface - curved or straight; Connects to any TV in seconds; 225 Degree Camera Rotation; Optional Carrying Case. **Last updated:** 14/05/2008

- **Jordy**

Jordy enables people with low vision to see objects at a distance, up close and at any range in between. This battery-operated system can be worn like a pair of glasses or used as a Desktop video magnifier when placed on its docking stand. Requires no special fitting procedures. Other features include: 30x magnification range; Auto focus; Focus lock; Digital zoom; Four viewing modes - full color, black & white, high contrast positive & negative; Built-in lighting system; Auto focus with push button locator. **Price**: £1795.00 **Last updated:** 09/05/2008

- **Max**

Max is a portable, hand-held digital magnifier designed for people with low vision. The size of a computer mouse, Max connects directly to any TV or monitor in seconds, to read newspapers, magazines, recipe cards and even medicine labels. Enlarge print on any surface curved or straight. The optional Max Track enables the magnifier to move smoothly across multiple surfaces. Max is available in a vivid color or black and white display. Max offers multiple viewing options and magnification up to 28x on a 20" TV. View pictures in photo mode or choose between high contrast positive or high contrast negative for easy reading. **Last updated:** 14/05/2008

Human Ware- 11 Mary Muller Drive, PO Box 3044, Christchurch, New Zealand. Tel: +64 3 384 4555 Fax: +64 3 384 4933 Email: nz.info@humanware.com Web: www.humanware.com

- **MagniLink Zip**

A portable desktop CCTV. Folds up to fit in the supplied carrying case. The system is available in two versions; MagniLink Zip and MagniLink Zip Black/White. It has a 17" TFT wide screen that can be tilted. Other features include: Autofocus, guiding line, positive and negative picture. Magnification range: 2.8x - 40x. Can be powered by main supply or battery. **Weight**: 8kg **Last updated:** 12/05/2008

Ovac - 67-555 E. Palm Canyon Drive, Building C-103, Cathedral City, California 92234, USA. Tel: +1 800 325 4488 (USA and Canada only) Fax: +1 760 321 9711 Email: info@ovac.com Web: www.ovac.com

- **OVAC Color-Eye**

A hand-sized color positive image only magnifier. Choose between hand held operations, or hands-free use with the flex arm mount and it can be focused from less than 1" all the way to infinity. Compatible with most TV screens. Magnification range of 9x to 32x on a 13" (51cm) TV monitor. **Price**: $395.00 **Last updated:** 14/05/2008

OVAC Golden-Eye

A hand-sized black and white positive image only magnifier. Choose between hand held operations, or hands-free use with the flex arm mount and it can be focused from less than 1" all the way to infinity. Magnification range of 9x to 32x on a 13" (51cm) TV monitor. Compatible with most TVs. **Price**: $295.00 **Last updated:** 14/05/2008

- **Pro-Zoomer**

The Pro Zoomer is a simple and easy way to magnify objects and materials. Just two simple adjustments, zoom and focus, enable you to read, pay your own bills or clip grocery coupons. Magnification ranges depend on size of TV screen. Includes an XY table. **Price**: $1,395.00 **Last updated:** 14/05/2008

B. **Hearing Impaired**

- **Phone Plus**

The Phone plus is used to increase the volume of the caller's voice through the users handset with the addition of boosting high or low tones if required. The Phone plus is a battery-operated device that connects between the base unit and handset of most corded handset telephones. It can be left connected when no volume or tone boosting is needed without affecting the performance of your telephone. The phone plus automatically switches "on" when the handset is lifted, and switches "off" when the handset is replaced. **Ref**: 140-051 **Price**: £23.50; £27.61 **Last updated:** 02/06/2008

- **Portable Telephone Amplifier**

The amplifier can boost incoming speech by at least twelve times and is small enough to be attached to most telephone handsets with the adjustable rubber strap. As well as amplifying the incoming speech the Portable Telephone Amplifier also produces a loop signal, which makes it suitable for use by people who wish to use their hearing aid switched to the "T" setting. The Portable Telephone Amplifier has an adjustable strap, which fits over the telephone receiver and holds the amplifier in place over the earpiece. It can be left in place on the handset provided that it does not prevent the handset from fully disconnecting the call. Note: the Portable Telephone Amplifier is not suitable for use with mobile telephones and many cordless (portable) telephones. **Ref**: 140-010 **Price**: £11.50; £13.51 **Last updated:** 02/06/2008

Ultratec, Inc - 450 Science Drive, Madison, Wisconsin 53711, USA. Tel:/TTY: +1 608 238 5400; 800 482 2424 (USA and Canada only) Email: service@ultratec.com Web: www.ultratec.com; www.captionedtelephone.com

- **CapTel**

Ideal for people with some degree of hearing loss, the Captioned Telephone (CapTel™) works like any other telephone with one important addition. It displays every word the caller says throughout the conversation. CapTel users can listen to the caller, and can also read the written captions in the CapTel's bright display window. CapTel is currently only available in states that offer the CapTel Captioning Service as part of their Relay Service. **Last updated:** 02/06/2008

- **Radio Paging and Alarm Systems**

The decreasing cost and size of radio paging systems has encouraged the development of modifications to assist deaf blind persons. Another significant factor has been the liberalization of the laws, in many countries, governing the use of very low powered radio transmitters.

- **Bellman Visit 868 Alarm Clock Receiver**

Bellman Visit 868 Alarm clock is a product for people who like to have a very clear wake up signal in the morning and for those who would like to be aware of, for example, when there is a signal on the door, telephone, baby-cry or smoke alarm. The Bellman Visit 868 Alarm clock functions similar to the Bellman Alarm clock however with some added functionality. The new Bellman Visit 868 Alarm clock includes a radio receiver. When someone rings e.g. the doorbell, the Bellman Visit 868 Door transmitter sends a signal to the Bellman Visit 868 Alarm clock that wakes up/alerts the user. Different coloured LED indicates the various alarms. The new 868 versions allow the user to distinguish alerts from up to four transmitters of the same kind. For example when the user need to know which baby needs their attention. **Width:** 110mm **Height**: 130mm **Depth**: 92mm **Ref**: BE1500 **Last updated:** 02/06/2008

- **Bellman Visit 868 Flash Receiver**

Bellman Visit 868 Flash receiver attracts the users attention with flashes and indicates the type of signal with different coloured LEDs, just like the Bellman Visit 868 Pager does. The Flash receiver can also be connected directly to the telephone line. For additional alerting capabilities the user can also connect a Bellman Visit 868 Bed-shaker to the receiver. The Flash receiver comes with a mounted table stand. There is also a wall bracket available as an accessory. The new 868 versions allow the user to distinguish alerts for up to four transmitters of the same kind. For example the user can have up to four door transmitters and the receiver will show them exactly which door that needs attention. **Height**: 140mm **Depth**: 70mm **Weight**: 3.5kg **Ref**: BE1440 **Last updated:** 02/06/2008

- **Bellman Visit 868 Pager Receiver**

The Bellman Visit 868 Pager receives signals from the Bellman Visit 868 transmitters and alerts with different and clear vibrations and lights for the various alarms. By using the Pager, it is possible for the user to move around freely in their home or into the garden and still be reached. The Pager is small enough to be put in a pocket or be attached to the trouser band for example. The new 868 versions allow the user to distinguish alerts from up to four transmitters of the same kind. For example the user can have up to four door transmitters and the receiver will show them exactly which door needs your attention. **Width**: 57mm **Height**: 86mm **Depth**: 29mm **Weight**: 0.7kg **Ref:** BE1470 **Last updated:** 02/06/2008

- **Bellman Visit 868 Portable Receiver**

The Bellman Visit 868 Portable receiver receives signals from the various Bellman Visit 868 transmitters and alerts the user using a range of different sound- and LED light signals for the various alarms. The Portable receiver has an optimized sound frequency and an adjustable sound level, from 0 dB to very loud, up to 90 dB. The new 868 versions attracts the users attention with clear LED flashing lights and different coloured lights for the various alarms. The new 868 versions allow the user to distinguish alerts from up to four transmitters of the same kind. For example the user can have up to four door transmitters and the receiver will show you exactly which door needs their attention. **Width**: 130mm **Height**: 165mm **Depth**: 38mm **Weight**: 5.70kg **Ref:** BE1450 **Last updated:** 02/06/2008

- **Bellman Visit 868 Smoke Alarm Transmitter**

The Bellman Visit 868 Smoke Alarm transmitter helps to detect fires. It is mounted on the ceiling, just like ordinary smoke alarms. The Smoke Alarm is activated by smoke and heat from fires and sends a radio signal to the Bellman Visit 868 receivers for clear alerting. Together with a Bellman Visit 868 Receiver, the Smoke Alarm can be used also outside the home, for example on a holiday trip. The new 868 versions have a safety feature which makes it impossible to fit the device on a wall or ceiling without a battery. The Smoke Alarm transmitter can detect both smouldering fires and open flames. **Width**: 100mm **Height**: 35mm **Ref**: BE1480 (opto-thermal model) **Last updated:** 02/06/2008

- **Bellman Visit Smoke Alarm Transmitter**

The smoke alarm is activated by smoke from fires and sends a radio signal to the Bellman Visit receivers, such as the Bellman Visit Pager, for clear alerting. Can also be used outside the home. Two models exist: BE1280 uses an optical type of detector and is approved in all European countries. Best suited for detecting smoldering fires, e.g. fires starting from cigarettes and bad electrical wires. BE1285 uses an ionization type of detector and is only approved in some Scandinavian countries. Best suited for detecting explosive fires, e.g. fires from an exploding TV. **Width**: 100mm **Height**: 35mm **Ref**: BE1280 (optical model) **Ref**: BE1285 (ionization model) **Last updated:** 02/06/2008

Clofield Limited - Freepost SF1206, Chesterfield, Derbyshire S41 8BR, UK. Tel: 0800 387 397 (Free phone) T text phone: +44 1246 572 141 Fax: +44 1246 450 789 Email: deaf.info@silent-alert.co.uk Web: www.silent-alert.co.uk

- **Silent Alert Paging System - SA3000**

The new, improved Silent Alert Personal Paging System allows people who are deaf, deaf blind or hard of hearing to get on with their lives with confidence, retaining independence and providing peace of mind for both the user and their families. The system includes a discreet, fully portable Pager unit worn by the user and now the New Sign Wave Portable Sounder Flasher. New Mini transmitter units send radio signals to alert the user of a number of events around the home. **Last updated**: 02/06/2008

Connevans Limited - 54 Albert Road North, Reigate, Surrey RH2 9YR, UK. Tel: +44 1737 247571 Text: +44 1737 243134 Fax: +44 1737 223475 Email: info@connevans.com Web: Information website www.connevans.com; Online shop www.DeafEquipment.co.uk

- **Daytime PPS433 Pager Package for Use with EI Deaf Alarm System**

This daytime alerting PPS433 personal pager package is for use with the EI nighttime vibrating smoke alarm. The pager can be taken outside into the garden. Additional trigger units with different channel codes for other environmental alerts may be added in the future. The package contains: a vibrating pager, a source powered fire trigger unit, a trigger to EI deaf alarm, a battery and a connecting lead. **Ref**: 433QPPSEI **Price**: £206.19 excluding VAT **Last updated:** 26/10/2006

- **Daytime PPS433 Premier Personal Pager Package for EI Vibrating Smoke Alarm**

This daytime alerting PPS433 personal pager package is for use with the EI nighttime vibrating smoke alarm. The pager can be taken outside into the garden. Additional trigger units with different channel codes for other environmental alerts may be added in the future. The package contains: a vibrating pager, a PVC pager pouch, a charger for 4 AA batteries, NiMH rechargeable batteries for pager, a source powered fire trigger unit, a trigger to EI deaf alarm, and a connecting lead. **Ref**: 433QPPS11 **Price**: £218.58 excluding VAT **Last updated:** 02/06/2008

- **DeafGard Fire Alarm Warning System**

DeafGard incorporates a wire-free, battery powered, acoustically triggered bedside unit that incorporates a high-density strobe, and a vibrating pillow pad. This system is an ideal product to help hotels and other residential facilities comply with the DDA. The connected vibrator pad is placed under the pillow. When the unit hears the fire alarm the under-pillow pad vibrates waking the sleeper, whilst the activated flashing strobe and LCD provides the complementary visual indicator. A secondary feature of the system is the vibrating alarm clock. **Ref**: 40FDGSYS **Price**: £195.00 excluding VAT **Last updated:** 02/06/2008

Easylink UK - 3 Melbourne House, Corby Gate Business Park, Priors Haw Road, Corby, Northants NN17 5JG, UK. Tel: +44 1536 264 869 Fax +44 1536 269 719 Email: enquiries02@easylinkuk.co.uk Web: www.easylinkuk.co.uk

- **Fire Centurion Smoke Alarm**

A radio controlled smoke warning system, which operates a flashing beacon and vibrator pad when smoke is detected. The battery operated smoke detector supplied with the system is fitted with a coded transmitter which, when activated by smoke, transmits a signal to the alerting console. Upon receipt of a valid signal (only the system smoke detector transmitter will operate the console) the console operates the vibrating pad and bright xenon flashing strobe. The alerting console has a full system battery back up which operates the system for up to 10 hours in the event of a power failure. Status indicator LED's alert the user to faults if they should occur such as, power failure or radio receiver failure. As standard one detector is supplied. Additional detectors may be purchased if required. **Ref:** FC01R **Price:** £118.00 + VAT (1 x alarm receiver 1 x smoke detector) **Additional Detectors Ref**: FC01DTX **Price**: £38.00 + VAT **Additional Alarm Receivers Ref**: FC01C **Price**: £80.00 + VAT **Last updated:** 03/06/2008

- **Smoke Alarm System with Ionization Smoke Detector**

The bed places the main base unit and a vibrating pad is placed under the pillow. Once the smoke detectors are installed and detect a fire, the system is activated, the strong strobe light flashes on the base (excellent for day and night time alerting) and the powerful under pillow pad vibrates to wake the heaviest sleeper. This smoke alarm system is extremely flexible and can be extended to suit the requirements of the users accommodation, with the capacity to add up to nine additional detectors. **Ref:** A223 **Price:** £96.00; £112.80 **Last updated:** 03/06/2008

Sarabec Ltd. - 15 High Force Road, Middlesborough TS2 1RH, UK. Tel: +44 1642 247789 Fax: +44 1642 230827 Email: mail@sarabec.co.uk Web: www.sarabec.co.uk

- **Lisa Personal Pager Pack**

All in one paging system comprised of vibrating pager receiver; vibrating pad; combi II transmitter. User has one vibrating pager receiver, which they will carry with them. The Combi II transmitter can be attached to an existing doorbell system via an acoustic sensor, and to a BT style telephone socket, which when triggered will send a signal via radio waves to the vibrating pager which in turn will alert the user via vibration and lights as to which device was activated. **Ref**: 230-560 **Price:** £139.00; £163.33 **Last updated:** 03/06/2008

Universal Aids Ltd - 8-14 Wellington Road South, Stockport, Cheshire SK4 1AA, UK. Tel: +44 161 480 9228 Fax: +44 161 476 5707 Email: enquiries@universalaids.co.uk Web: www.universalaids.co.uk

- **Sound Indicators**

A sound indicator is an electronic device that gives out a vibratory signal when it picks up an audio signal (e.g. a telephone bell) above a pre-set level. Usually the vibratory signal lasts for a fixed minimum time, and the amplitude of the vibration is usually constant (i.e. independent of the amplitude of the input signal). With some devices it is possible to tune the device to only pick up audio signals at or about a fixed frequency; this is useful in minimizing the number of times the device is activated by picking up the wrong audio signal.

- **Bellman Ringer**

The Bellman Ringer amplifies the telephone ring and allows the user to adjust not only the ring volume but also the ring characteristics. The adjustable ring frequencies are optimized for the best audibility and the light signal further facilitates the recognition. By using the Bellman Ringer, the user will hear and see their telephone ringing much easier. The various tone alternatives also make it easier to hear which telephone is ringing, if more than one. The Ringer is very easy to use and to bring along to the

summerhouse etc., just snap the intermediate adapter into the telephone socket. An outdoor ringer (BE9003) can be connected to Bellman Ringer for telephone alerting also in the garden etc. **Width:** 90mm **Height**: 155mm **Depth**: 32mm **Ref**: BE1010 **Last updated:** 03/06/2008

- **Bellman Visit 868 Baby-Cry Transmitter**

The Bellman Visit 868 Baby-cry transmitter helps the user to notice when their baby is crying. It is wireless and easy to use; just place it standing close to the baby. The Baby-cry transmitter is activated by crying or screaming and sends a radio signal to the Bellman Visit 868 receiver(s) for alerting. The Baby-cry transmitter can be adjusted in several ways to fine tune how sensitive the detection should be in order to better the users needs. The new 868 version allows several Baby-cry transmitters to be used in one place. Up to four transmitters can be used to send individual alerts. A very practical solution when the user needs to know which baby needs attention. **Width**: 80mm **Height**: 145mm **Depth**: 36mm **Ref**: BE1490 **Last updated:** 27/10/2006

- **Bellman Visit 868 Flash Receiver**

Bellman Visit 868 Flash receiver attracts the users attention with flashes and indicates the type of signal with different coloured LEDs, just like the Bellman Visit 868 Pager does. The Flash receiver can also be connected directly to the telephone line. For additional alerting capabilities the user can also connect a Bellman Visit 868 Bed-shaker to the receiver. The Flash receiver comes with a mounted table stand. There is also a wall bracket available as an accessory. The new 868 versions allow the user to distinguish alerts for up to four transmitters of the same kind. For example the user can have up to four door transmitters and the receiver will show them exactly which door that needs attention. **Height**: 140mm **Depth**: 70mm **Weight**: 3.5kg **Ref**: BE1440 **Last updated:** 02/06/2008

- **Bellman Visit 868 Pager Receiver**

The Bellman Visit 868 Pager receives signals from the Bellman Visit 868 transmitters and alerts with different and clear vibrations and lights for the various alarms. By using the Pager, it is possible for the user to move around freely in their home or into the garden and still be reached. The Pager is small enough to be put in a pocket or be attached to the trouser band for example. The new 868 versions allow the user to distinguish alerts from up to four transmitters of the same kind. For example the user can have up to four door transmitters and the receiver will show them exactly which door needs your attention. **Width**: 57mm **Height**: 86mm **Depth**: 29mm **Weight**: 0.7kg **Ref:** BE1470 **Last updated:** 02/06/2008

- **Bellman Visit 868 Portable Receiver**

The Bellman Visit 868 Portable receiver receives signals from the various Bellman Visit 868 transmitters and alerts the user using a range of different sound- and LED light signals for the various alarms. The Portable receiver has an optimized sound frequency and an adjustable sound level, from 0 dB to very loud, up to 90 dB. The new 868 versions attracts the users attention with clear LED flashing lights and different coloured lights for the various alarms. The new 868 versions allow the user to distinguish alerts from up to four transmitters of the same kind. For example the user can have up to four door transmitters and the receiver will show you exactly which door needs their attention. **Width**: 130mm **Height**: 165mm **Depth**: 38mm **Weight**: 5.70kg **Ref:** BE1450 **Last updated:** 02/06/2008

- **Bellman Visit 868 Telephone Transmitter**

The Bellman Visit 868 Telephone transmitter is a part of the Bellman Visit 868 system helping the user to notice telephone calls. The installation is simple; just plug the Telephone transmitter into the telephone socket by using the enclosed intermediate adapter. When activated by an incoming telephone call, the Telephone transmitter sends a radio signal to the Bellman Visit 868 receiver(s) for alerting. When disconnecting the telephone cord, the Telephone transmitter ("Multipurpose transmitter") can be used as a Push-button transmitter together with other triggering devices like Door entering contact mats, external relays/push-buttons or magnetic contacts for supervising the person entrances and the opening of door/windows etc. The new 868 versions allow the Telephone transmitter to send different types of alerts to the receivers. The receivers can then give specific alerts in response to a doorbell sound from the test button or an alert sound from the entrance mat etc. **Width**: 60mm **Height**: 98mm **Depth**: 30mm **Ref**: BE1430 **Last updated:** 03/06/2008

- **Ring Plus**

Doro Ring Plus is a sound and light amplifier with high intensity light and extra loud ringer. User can choose to have both light and/or sound activated. Doro Ring Plus is easy to install and it is compatible with most telephones. Doro Ring Plus can be easily wall mounted or laid flat on a convenient surface. Ideal for special needs applications. **Last updated:** 03/06/2008

Friedland - The Arnold Centre, Paycocke Road, Basildon, Essex SS14 3EA, UK. Tel: +44 1268 563000 Fax: +44 1268 563538 Email: mkorderenquiries@honeywell.com Web: www.friedland.co.uk

- **Libra+ Professional Wire free Portable Chime**

Silver portable chime with 200m range (approx.); CD quality chime sound; Choice of 6 chime sounds and 6 visual chime icons; 3 alert sounds; Flashing light for visual indication for the hard of hearing or loud environments; Easy installation – no wiring required; Pre-programmed push to chime and self-learning to avoid interference with neighbors' chimes; Bell push fixings included. **Ref**: D917 **Last updated:** 03/06/2008

- **Libra+ Professional Wire free Portable Chime Kit**

Silver portable chime kit with 200m range (approx.); CD quality chime sound; Includes portable/wall mounted chime and white slim line bell push; Choice of 6 chime sounds and 6 visual chime icons; 3 alert sounds; Flashing light for visual indication for the hard of hearing or loud environments; Easy installation – no wiring required; Pre-programmed push to chime and self-learning to avoid interference with neighbors' chimes; Bell push fixings and battery included. **Ref**: D914 **Last updated:** 03/06/2008

Geemarc Telecom S.A. - 5 Swallow Court, Swallow fields, Welwyn Garden City, Hertfordshire AL7 1SB, UK. Tel: +44 1707 372372 Fax: +44 1707 372529 Email: sales@geemarc.com Web: www.geemarc.com

- **Telephone Ring Indicator and Flasher**

Telephone ringer alarm. Extra loud ringer (up to 95dB). Tone & Volume control. 4 alarm options: Off, Flash Alarm, Flash Shaker, and Alarm Shaker. Wall Mountable. Strobe Flasher. Possibility to link a second CL1. Shaker (optional) **Color**: Black **Ref**: CL1 **Price:** £29.99 **Last updated:** 03/06/2008

RNID - 1 Haddenbrook Business Centre, Orton, Southgate, Peterborough PE2 6YX, UK. Tel: 0870 789 8855 Fax: 0870 789 8822 Email: solutions@rnid.org.uk Web: www.rnid.org.uk/shop

- **Genesis Plug-in Door Chime**

The completely wire-free receiver can be taken into the kitchen or a bedroom at night or even given to a neighbor whilst the user is on holiday. Option of flashing light and/or amplified sound. Up to 10 flashes. Range of approximately 200m. Volume control and five ring options. Loudness approximately 73dB at a distance of 1m. **Ref:** A170 **Price:** £24.95; £29.32 **Last updated:** 03/06/2008

- **Portable Flashing Door Chime**

It is easy to fit, as it is battery operated. The bell push can be fixed to the outside of the doorframe and the portable receiver can be taken anywhere within the home up to 100m. Features a high intensity flashing alarm with up to 23 flashes; Suitable for profoundly deaf people; Loudness approx. 79dB at 1m; 10 different ring sound options. **Ref:** A174 **Price:** £26.78; £31.47 **Last updated:** 03/06/2008

Sarabec Ltd. - 15 High Force Road, Middlesborough TS2 1RH, UK. Tel: +44 1642 247789 Fax: +44 1642 230827 Email: mail@sarabec.co.uk Web: www.sarabec.co.uk

- **Phone Flash 2 EI System**

The Phone flash produces a bright flashing light that makes the user aware that the telephone is ringing in situations when they cannot, or do not want to, hear it ring. The Phone flash is a mains powered light that plugs directly into a BT type telephone socket and flashes whilst the telephone is ringing. Because it detects the ringing from the telephone line the user does not need to have the telephone in the same socket. If they wish to use the same socket for both the telephone and the Phone flash an adaptor is

available that will convert the single socket into two sockets. The Phone flash can be wall mounted if required. **Ref**: 140-221 **Price:** £32.31

- **Amplification Systems**

Amplification System for Radio

- INFRARED TRANSMITTER

The Infrared Transmitter is an infrared personal amplification system designed for use by individuals who are hard of hearing. This system can be used for television or music listening, at home or in motor vehicles. For stereo operation, the system connects directly to a TV, VCR, or DVD equipped with standard RCA audio output jacks. The system features a Sound Clarity wireless infrared transmitter, a power source and RCA cables. The Infrared Transmitter is intended to be used with the Able Planet True Fidelity Infrared Wireless Headphones (see separate entry). DIMENSIONS (LxWxH): 4.5 x 4 x 2 inches. COLOR: Black.

Price: 89.99.

This product record was updated on May 25, 2011.

This product is available from:

Manufacturer:
Able Planet - 9500 W. 49th Ave., Bldg., B-102
Wheat Ridge, Colorado 80033
United States
Telephone: 877-266-1979 or 303-215-9778.
TT: 303-215-9778.
Fax: 303-215-9774.
Web: http://www.ableplanet.com.
Email: info@ableplanet.com.

Amplification System for Radio

- TRUE FIDELITY INFRARED WIRELESS HEADPHONES (MODEL IR200)

The True Fidelity Infrared Wireless Headphones, model IR200, is a headphone set for infrared (IR) amplification system designed for use by individuals who are hard of hearing. It is designed for use with the Infrared Transmitter from Able Planet, Inc. (see separate entry). The headphones can be used to listen to home stereo and theater systems, televisions or automobile stereos. The headphones include a lightweight adjustable headband and full size swiveling earpiece with foam ear cushions. The complete system includes four internal receiving diodes that capture the IR signal from the transmitter at any angle, single channel infrared headphone, volume control, and push button on/off switch with red status LED light. The auto off sensors extends battery life by turning off the headphones 3.5 minutes after the signal from the Infrared Transmitter has been terminated.

Notes: Shipping and handling charges are not included in the purchase price. True Fidelity is a registered trademark of Able Planet, Inc.

Price: 99.00.

This product record was updated on May 25, 2011.

This product is available from:

Manufacturer: - Able Planet
9500 W. 49th Ave., Bldg., B-102
Wheat Ridge, Colorado 80033
United States
Telephone: 877-266-1979 or 303-215-9778.
TT: 303-215-9778.
Fax: 303-215-9774.
Web: http://www.ableplanet.com.
Email: info@ableplanet.com.

Amplification System for Television

- AUDIOFOX TV LISTENING DEVICE

The Audio fox TV Listening Device is a personal amplification system for television designed for use by individuals who are deaf or hard of hearing. This wireless speaker system provides personal volume control without the use of headphones. The transmitter is connected to the television with the included AV cables. Sound is sent wirelessly from the transmitter to the speakers, which are hung over the back of the user's chair on opposite sides to provide stereo sound. The system includes a transmitter, RCA coaxial audio cables, two speakers and two AC plugs with transformer. POWER: 120 volt AC. DIMENSIONS: Speakers are 3 inches in diameter. WEIGHT: 3 pounds. COLOR: Gray, black, beige or dark brown. WARRANTY: 30-day money back guarantee; one year warranty.

Price: 249.95.

Link to Video:

This product record was updated on July 17, 2013.

This product is available from:
Manufacturer:
Sound Product Solutions
12515 Northeast 95th Street
Vancouver, Washington 98682-2463
United States
Telephone: 800-839-0366.
Web: http://www.audiofox.com.
Email: info@audiofox.com.

Amplification System for Television

- INFRARED TRANSMITTER

The Infrared Transmitter is an infrared personal amplification system designed for use by individuals who are hard of hearing. This system can be used for television or music listening, at home or in motor vehicles. For stereo operation, the system connects directly to a TV, VCR, or DVD equipped with

standard RCA audio output jacks. The system features a Sound Clarity wireless infrared transmitter, a power source and RCA cables. The Infrared Transmitter is intended to be used with the Able Planet True Fidelity Infrared Wireless Headphones (see separate entry). DIMENSIONS (LxWxH): 4.5 x 4 x 2 inches. COLOR: Black.

Price: 89.99.
This product record was updated on May 25, 2011.
This product is available from:
Manufacturer:
Able Planet
9500 W. 49th Ave., Bldg., B-102
Wheat Ridge, Colorado 80033
United States
Telephone: 877-266-1979 or 303-215-9778.
TT: 303-215-9778.
Fax: 303-215-9774.
Web: http://www.ableplanet.com.
Email: info@ableplanet.com.

Amplification System for Television

- MOTIVA PERSONAL FM SYSTEM (MODEL PFM 360)

The Motiva Personal FM System, model PFM 360, is a FM personal amplification system designed for use by individuals who are deaf or hard of hearing. The system can be used for TV or audio listening, conversing in a car or at a restaurant, or in group settings such as a classroom, where it maximizes a student's ability to hear and ensures that the speaker's message is heard clearly. The transmitter can be used to mix and broadcast a speaker´s voice plus an audio program simultaneously in one room. The system can be customized with selectable compression and adjustable frequency response. It has 16 selectable channels on the 72 to 76 megahertz (MHz) frequency with an operating range of up to 150 feet. A 3.5-millimeter jack allows for a variety of earphone and headphone options, and the system is compatible with a neck loop or hearing aid (not included). The system includes one R36 receiver with a sensitive environmental microphone. POWER: Uses battery; battery options include 1.5-volt double-A disposable, alkaline battery; 1.2-volt double-A rechargeable NiMH battery. OPTIONS: Black cordura carry case; wide range earphone; single mini ear bud earphone; dual mini ear bud earphone; surround earphone; hearing protector headphone; deluxe folding headphone; plug Mount omnidirectional

microphone; directional mini lapel clip mic; neck loop; rear-wear headphone; directional headband microphone; dual drop-in charger; drop-in charger kit with batteries; ultimate heavy duty folding headphone.

Notes: Motiva is a trademark of Williams Sound Corporation.
Price: 499.00 - 379.00.
Link to Video:
This product record was updated on July 1, 2010.
This product is available from:
Manufacturer:
Williams Sound Corp
10300 Valley View Rd
Eden Prairie, Minnesota 55344
United States
Telephone: 800-328-6190 or 952-943-2252.
Fax: 952-943-2174.
Web: http://www.williamssound.com.
Email: info@williamssound.com.

Amplification System for Television

- MY-T LISTENING SYSTEM

The My-T Listening System is a wireless loop amplification system for television designed for use by individuals who are deaf or hard of hearing and who use hearing aids. This system provides sound reception from the television or other audio system for people who wear hearing aids fitted with a telecoil (or t-coil). The system consists of two main components: a transmitter that connects to the television or audio system and a receiver that is placed in close proximity to the hearing aid wearer. Sound is picked up from the TV by the transmitter which then sends it wirelessly to the receiver using infra red technology. The portable receiver, which has a built-in handle, which can be placed on a table, chair, or on the floor, providing the unit is no further than 4 feet from the user. Sound is transmitted from the receiver as a magnetic field, which connects to the telecoil in the user's hearing aid. The receiver also has a built in microphone for use with devices that do not have an audio output jack. This plug and play system can be used throughout the home and in other locations.

Price: 399.00.
Link to Video:
This product record was updated on July 24, 2013.
This product is available from:
Manufacturer:
Contacta, Inc
332 E. Lakewood Blvd.
Holland, Michigan 49424
United States
Telephone: 616-392-3400.
Web: http://www.contactainc.com.
Email: richard@contactainc.com.

Wireless Microphone

- SONIC SUPER EAR

The Sonic Super Ear is an assistive listening system designed to pick up sound at the source, amplify it and direct it toward the listener for individuals who hard of hearing. The user puts on the stereo headphones, turns on the system and adjusts the volume. It is completely portable with a spring steel clip provided for attaching the amplifier to a pocket, label or belt. It is designed to provide up to 50+ decibals of ambient sound amplification with a maximum output of 107dB. POWER: A single 1.5 AAA alkaline battery for up to 30 hours of operation. (Battery is included). The premium stereo headphones deliver clear, crisp sound, particularly within the human voice range. OPTIONS: Replaceable ear foam pads are available.

Price: 44.99.
This product record was updated on December 9, 2011.
This product is available from:
Manufacturer:

S&S Worldwide
PO Box 513
75 Mill Street
Colchester, Connecticut 06415

United States
Telephone: 800-288-9941 or 860-537-3451.
Fax: 800-566-6678.
Web: http://www.ssww.com.
Email: cservice@ssww.com.

Deaf and Hard of Hearing General

- ALGO NEWBORN HEARING SCREENING SYSTEM

The ALGO Newborn Screening System is an auditory evaluation system designed for use in evaluating hearing in newborns. This system screens both ears simultaneously. Colored, customizable graphical displays guide the user through the screening process, and the system provides automated, objective pass/refer results. Screening parameters are pre-set and standardized. An audio-visual tutorial provides tips on how to conduct screening. Device-based data management facilitates creation of statistical reports and letters. Data can be transferred via network (WLAN or LAN), CD-R, or USB flash drive. The system comes with a workstation/cart with large wheels, a push handle, a writing surface with space for a printer, and shelves and a drawer for storage. OPTIONS: Natus screening supplies, including Jelly Tab sensors and Flexi coupler and Value-Pak earphones.

Notes: ALGO, Flexi coupler, and Jelly Tab are registered trademarks of Natus Medical LLC.
Price: Contact manufacturer.
This product record was updated on October 14, 2011.
This product is available from:
Manufacturer:

Natus Medical Incorporated
1501 Industrial Road
San Carlos, California 94070
United States
Telephone: 800-255-3901 or 650-802-0400.

Fax: 650-802-0401.
Web: http://www.natus.com.

Auditory Evaluation System

- AUDIOSCAN RM500 SL

The Audio Scan RM500 SL is a portable auditory evaluation and hearing aid acoustic test system designed for use in hearing aid fitting. Hearing is tested using the American National Standards Institute (ANSI) S 3.22 2003 standard test sequence. The unit has a fluorescent backlit color display, a built-in thermal line printer, and an integrated sound box. It comes in a cast aluminum case with a carrying handle. DIMENSIONS: 15.5 x 12.75 x 4.25 inches with a display measuring 12.1 inches diagonally. The sound box is 31 square inches. WEIGHT: 15 pounds.

Price: Contact manufacturer.
This product record was updated on July 2, 2009.
This product is available from:
Manufacturer:
Audio scan
41 Byron Avenue
Dorchester, Ontario N0L 1G0
Canada
Telephone: 800-265-2093 or 519-268-3313.
Fax: 519-268-3256.
Web: http://www.audioscan.com.
Email: info@audioscan.com.

Auditory Evaluation System

- AVANT REM SPEECH+

The Avant REM Speech+ is an auditory evaluation system designed for use by audiologists for hearing assessments. This live speech mapping system allows for monaural or simultaneous binaural measurements using the Sure-Probe microphone system. Features include simultaneous FFT dual probe measurement, adjustable ear loop microphones, color-coded ear indicators (blue for left and red for right), DSL and NAL-NL1 targets, hearing loss simulation for third party demonstrations, and compatibility with NOAH, Sycle.Net, and TIMS. POWER: Uses USB cable from computer. COMPATIBILITY: For use on IBM and compatible personal computers. SYSTEM REQUIREMENTS: Windows XP Professional or Vista Business operating system; Intel Dual Core, 1.8 GHz or better processor; 2 gigabyte (GB) RAM; 256 megabytes (MB) free hard drive space; two available USB ports; CD-ROM or DVD-ROM drive. COLOR: Black or white.

Notes: Sure-Probe is a trademark of MedRx Inc. NOAH is a trademark and TIMS is a registered trademark.
Price: Contact manufacturer.
This product record was updated on July 7, 2009.
This product is available from:
Manufacturer:
MedRx, Inc.
1200 Starkey Rd., #105
Largo, Florida 33771
United States
Telephone: 888-392-1234 or 727-584-9600.
Fax: 727-584-9602.
Web: http://www.medrx-usa.com.
Email: medrx@medrx-usa.com.

Auditory Evaluation System

- EARSCAN 3 MANUAL AUDIOMETER (MODEL ES3M)

The Ears can 3 Manual Audiometer, model ESM3, is a hearing screening instrument designed for use with individuals with hearing disabilities. This user-programmable pure tone portable audiometer features a large, easy-to-read liquid crystal display (LCD) screen and talk over for communicating with the individual being tested. The unit includes a password-protected calibration mode to ensure the integrity of data, and a calibration due date reminder is displayed at startup. A carrying case, manual, and headset are included. POWER: Uses four double-A alkaline batteries (included) or an alternating current (AC) adapter (included). DIMENSIONS (LxWxH): 5.8 x 3.6 x 1.3 inches. WEIGHT: 9.8 ounces. WARRANTY: 3-year limited warranty.

Notes: Ears can is a registered trademark.
Price: 795.00.
This product record was updated on May 9, 2012.
This product is available from:
Manufacturer:

Micro Audiometric Corp.
655 Keller Road
Murphy, North Carolina 28906
United States
Telephone: 866-327-7226 or 800-729-9509 or 828-644-0771.
Fax: 866-683-4447.
Web: http://www.earscan.com.
Email: sales@microaud.com.

Auditory Evaluation System

- PA5 PEDIATRIC AUDIOMETER

The PA5 Pediatric Audiometer is an auditory evaluation system designed for use by audiologists in evaluating the hearing of infants and young children. Operable with one hand, this unit provides variable stimuli for screening infants via auditory localization techniques. The two stimuli, light and sound, are controlled by silent buttons. Both stimuli can be presented simultaneously for visual reinforcement audiometry (VRA) by letting one finger touch both buttons. Two units can be used for the conditioned orientation response (COR) test by using one in each hand. The tester can use either unit to evoke a head turn with the stimulus and then provide visual reinforcement. Sound stimuli include white noise, warble, and narrow band stimuli. A lightweight bag is included. OPTIONS: Audiometric headphone (model TDH39). POWER: Uses 3 double-A alkaline batteries (included). DIMENSIONS (HxLxW): 2 x 9.8 x 2.7 inches. WEIGHT: 0.8 pounds with batteries.

Price: Contact manufacturer.
This product record was updated on August 31, 2009.
This product is available from:
Manufacturer:

Interacoustics A/S
7625 Golden Triangle Dr.
Eden Prairie, Minnesota 55344
United States
Telephone: 800-947-6334 or 952-278-4477.
Fax: 952-903-4200.
Web: http://www.interacoustics.com.
Email: info@interacoustics-us.com

Communication Aid for the Deaf

- UBIDUO

The UBIDUO is a keyboard communicator designed for use by individuals with hearing or communication disabilities. This portable, wireless, stand-alone communication device facilitates simultaneous face-to-face communication by means of two displays and two keyboards. The device comprises one unit is comprised with two halves which enables two people to have a face-to-face conversation. Patented hinge technology enhances portability and allows the two halves to be quickly separated for use in a variety of settings. The Ubi4Tel feature provides two-way, simultaneous communication over the telephone line when calling another UbiDuo. Up to two more people (one on each end) can be added to the telephone conversation using the UBIDUO wireless capability, thus enabling a three- or four-way conference call. Wireless range is 500 feet and the UbiDuo has its own isolated wireless frequency that cannot be tapped by other wireless modes; the wireless is only isolated between the two UbiDuo halves. "In Range" mode identifies when another UbiDuo is within wireless chat range. Other features include Reverse video, enabling a choice of dark text on a light background or light text on a dark background; a USB port for connection to a computer so conversations can be saved and printed and the UbiDuo software updated as needed; and 1.22 megabytes (MB) of storage space which can hold up to 61 log files containing 20 kilobytes (KB) each (a single 20 KB log file has approximately 350 lines in it). The screen angle can be adjusted from flat to 45 degrees for easy viewing and the font size is adjustable from 12 to 24 point. Emoticons enable users to express themselves more clearly as they type. The unit offers 40 different commands and options to fully customize the chat experience. A carrying case, USB cable, user manual, and one year of firmware upgrades are included. POWER: Uses a rechargeable battery pack (included). Two power supplies/rechargers are also included. Additional battery packs and power supplies are available. OPTIONS: Replacement carrying case and USB cable. DIMENSIONS: 9 7/8 x 14.5 x 1 inch. WARRANTY: One-year limited warranty.

Price: 1995.00.
This product record was updated on September 22, 2009.
This product is available from:
Manufacturer: 6238 Hadley Street
Raytown, Missouri 64133-4112
United States
Telephone: 866-505-7008 or 816-350-7008.
TT: 866-505-7001 or 816-350-7001.
Web: http://www.scommonline.com.
Email: info@scommonline.com.

Hearing Aids

- ADAPTO HEARING AID

ADAPTO is a programmable hearing aid designed for use by individuals who are deaf or hard of hearing. It is available in four styles: Completely-In-the-Canal (CIC), In-the-Canal (ITC), In-the-Ear (ITE), and Behind-the-Ear (BTE). The CIC, ITC, and ITE hearing instruments are custom made for the user's ears. In BTE models the hearing instrument is held in place behind the ear with a custom made ear mold. In ADAPTO CIC, all components are housed in a small case that fits far into the ear canal. The ADAPTO ITC is bigger than the CIC, but also fits far into the ear canal. It allows for more open ear fittings, and is used for mild to moderate hearing loss. Because of its larger size, the ADAPTO ITE can accommodate larger sound amplifiers and more features, such as a telephone switch, and can be used for a wider range of hearing loss. The BTE hearing aid also provides more amplification than smaller devices. OPTIONS: Multi-programming capacity for adapting to different listening environments. Both the BTE and ITE come in a directional version enabling the user to focus on sounds coming from the front. The BTE accessories include a tamper-resistant battery drawer, DAI and WTC shoes for FM systems, and an eyeglass adaptor. COLOR: The CIC, ITC, and ITE hearing instruments are pink, tan, medium brown, or dark brown. The BTE models are beige, light brown, dark brown, light gray, dark gray, yellow, orange, pink, purple, blue, green, or transparent.

Price: Contact manufacturer.
This product record was updated on October 3, 2007.
This product is available from:
Manufacturer:
Oticon, Inc.
29 Schoolhouse Road
Somerset, New Jersey 08873
United States
Telephone: 800-526-3921 or 732-560-1220.
Web: http://www.oticonusa.com.
Email: dmb@oticonusa.com

Behind the Ear Hearing Aid

- AXIO HEARING AID (MODEL IM32)

The Axio Hearing Aid, model iM32, is a programmable hearing aid designed for use by individuals who are deaf or hard of hearing. This digital hearing aid can adjust instantly to different listening environments without feedback while filtering out background noise. It automatically adjusts to telephone, music, or television listening. It has voice status indicators for low battery and listening mode in male or female voices in a variety of languages, and can be programmed with audible voice or tone reminders for follow-up appointments and maintenance checks. This model is available in RIC and RIC mPower (receiver-in-canal), CIC (completely-in-canal), ITC (in-the-canal), and ITE (in-the-ear) styles.

Notes: Axio and Impulse are trademarks of Micro-Tech Hearing Instruments.

Price: Contact manufacturer.
This product record was updated on August 25, 2009.
This product is available from:
Manufacturer:
Micro Tech Hearing Technologies
6425 Flying Cloud Drive
Eden Prairie, Minnesota 55344
United States
Telephone: 800-745-4327.
Web: http://www.microtechhearingpro.com.

Behind the Ear Hearing Aid

- BALANCE

Balance is a digital hearing aid designed for use by individuals who are deaf or hard of hearing. This hearing aid uses environment-based programming, with seven preset scenarios (Universal, Noise,

Telephone, Quiet, Classroom, Music, and Mute) and is is programmed based on the environments encountered most often by the user. Other features include adaptive noise reduction, increased speech to noise ratio, fixed and adaptive feedback cancellation, and configurable directionality. Styles include completely in canal (CIC) and micro and standard behind the ear (BTE). WARRANTY: Three years.

Price: Contact manufacturer.
This product record was updated on August 19, 2008.
This product is available from:
Manufacturer:
Sonic Innovations
2795 E. Cottonwood Parkway, Ste 660
Salt Lake City, Utah 84121
United States
Telephone: 888-678-4327 (consumers) or 888-423-7834 (professionals).
Web: http://www.sonici.com.
Email: directmail@sonici.com.

Behind the Ear Hearing Aid

- EMBRACE BASE HEARING AID

The Embrace Base is a digital behind the ear hearing aid designed for use by individuals who are hard of hearing. The Base is specifically intended for individuals with mild to moderate hearing loss. It features automatic feedback cancellation, user-controlled volume, telecoil input for telephone compatibility, two independent memory settings, and dirt and moisture-repellent Nano-coating. Each hearing aid is custom programmed based on the user's individual hearing profile as determined by an audiologist (audio logical visits are not included). A 3-month supply of ear tubes and tips are included. POWER: Uses 312 batteries (3 month supply included). COLOR: Beige. WARRANTY: 45-day free returns; 2 year manufacturer warranty. DELIVERY TIME: 5 to 8 business days.

Notes: The price for a pair of hearing aids is $798.00; a single hearing aid for either ear is $499.00. ** The price includes professional phone support directly from Embrace Hearing.

Price: 798.00 to 499.00.
This product record was updated on July 22, 2013.
This product is available from:
Manufacturer:
Embrace Hearing

New York, New York United States
Telephone: 917-830-4327.
Fax: 917-382-2742.
Web: http://www.embracehearing.com.
Email: info@embracehearing.com.

Behind the Ear Hearing Aid

- EMBRACE X-MINI HEARING AID

The Embrace X-Mini is a digital behind the ear hearing aid designed for use by individuals who are hard of hearing. It is specifically intended for individuals with mild to moderately severe hearing loss. The X-Mini has an external receiver that fits behind the ear, and is connected to a receiver in the ear canal with a transparent tube. It has an adaptive, Multi-Mic, multi-channel directional system with binaural synchronization for speech recognition, noise reduction, and feedback blocking, with 4 channels, 8 bands, and 4 program settings. The system comes with free custom programming based on the user's individual hearing profile. The user can select from a variety of tones or melodies to serve as alerting signals. This hearing aid is available for left, right, or both ears. The housing has right or left side identification. Other features of the X-Mini's housing include a wave design with contrasting color, a dirt and moisture-repellent Nano-coating, a program pushbutton, an on/off switch, ad a battery compartment. OPTIONS: Wireless remote control syncs with hearing aids to manually control volume, change program, and turn the hearing aids on and off. A 3-month supply of ear tubes and tips are included. POWER: Uses 312 batteries (3 month supply included). COLOR: Silver, bronze, pearl, gold, copper, beige, or gray. WARRANTY: 45-day return; 2 year manufacturer warranty. DELIVERY TIME: 5 to 8 business days.

Notes: The price for a pair of hearing aids is $1198.00; a single hearing aid for either ear is $699.00. ** The price includes professional phone support directly from Embrace Hearing.
Price: 1198.00 to 699.00.
This product record was updated on July 22, 2013.
This product is available from:
Manufacturer: Embrace Hearing
New York, New York United States
Telephone: 917-830-4327. **Web:** http://www.embracehearing.com.
Email: info@embracehearing.com.

Behind the Ear Hearing Aid

- INTUIS HEARING AID

The Intuis Hearing Aid is a behind the ear hearing aid designed for use by individuals who are deaf or hard of hearing. Designed for durability, this device comes in various models and custom behind-the-ear styles to fit many types of wearers. Features include noise reduction, basic directional microphone systems, phase cancellation feedback reduction, and four-channel signal processing for flexibility and easy fitting.

Notes: Features may vary depending on model and style.

Price: Contact manufacturer.
This product record was updated on December 18, 2009.
This product is available from:

Manufacturer:
Siemens Hearing Instruments, Inc.
PO Box 1397, 10 Constitution Avenue
Piscataway, New Jersey 08855-1397
United States
Telephone: 800-766-4500 or 732-562-6600.
Fax: 732-562-6696.
Web: http://www.siemens-hearing.com.

Sign Language

- Sign Language Dictionary

I Sign is a sign language training program and sign language dictionary designed for use by people with hearing disabilities and others desiring to learn American Sign Language. The program uses animated graphics to illustrate and teach 800 ASL signs. The words or phrases can be viewed alphabetically or in categories, and there is quiz feature that shows a video clip of a sign and asks the user to select the correct word or phrase from a list. Users can also build a "Favorites" list for quick access to frequently used signs and use a search function to find words and phrases. COMPATIBILITY: For use with the Apple iPhone, iPod Touch or iPod. SYSTEM REQUIREMENTS: Apple iOS 3.0 or later.

Notes: This product is sold through the App Store on Apple iTunes. ** IPhone, iPod Touch, iPod and iTunes are registered trademarks of Apple Inc.

Price: 4.99.
This product record was updated on May 17, 2011.
This product is available from:
Manufacturer:

IDev2
Lexington, Kentucky United States
Telephone: 859-963-2034.
Web: http://www.idev2.com.
Email: aaron.basil@gmail.com.

Sign Language Dictionary

- IASL

IASL is a sign language training program and sign language dictionary designed for use by people with hearing disabilities and others desiring to learn American Sign Language. The program uses video of an ASL instructor to illustrate and teach over 5,800 ASL signs. The words or phrases can be viewed alphabetically or in categories. Users can also build a "Favorites" list for quick access to frequently used signs and use a search function to find words and phrases. IASL features a custom translator that provides grammatically correct translations and translates sentences up to five words. Automatic video sequencing is available, and iASL fingerspells words that are not available in its dictionary. COMPATIBILITY: For use with the Apple iPhone, iPod Touch or iPod. SYSTEM REQUIREMENTS: Apple iOS 3.1.2 or later.

Notes: This product is sold through the App Store on Apple iTunes. IPhone, iPod Touch, iPod and iTunes are registered trademarks of Apple Inc.
Price: 1.99.
This product record was updated on May 24, 2011.
This product is available from:

Manufacturer:
BKS Technologies, LLC
Pennsylvania United States
Web: http://iaslapp.com.
Email: support@iaslapp.com.

Chapter-5-ICT Computer applications and Software for learning difficulties and dyslexia

The software links below have been compiled as an information resource and inclusion does not indicate endorsement by e-bility. When installing any new software precautions such as running a virus checker before use, closing all other programs, and ensuring you have a recent backup of your hard drive are recommended. If you are on a networked PC you should also consult your network administrator before installing software. Unfortunately, e-bility cannot accept responsibility for any damage, disruption and/or loss to your data or computer system that might occur while using any of these programs. Requests for technical support should be directed to the software developer.

Providing access to technology

People with disabilities meet barriers of all types. However, technology is helping to lower many of these barriers. By using computing technology for tasks such as reading and writing documents, communicating with others, and searching for information on the Internet, students and employees with disabilities are capable of handling a wider range of activities independently. Still, people with disabilities face a variety of barriers to computer use. These barriers can be grouped into three functional categories: barriers to providing computer input, interpreting output, and reading supporting documentation. Hardware and software tools (known as adaptive or assistive technologies) have been developed to provide functional alternatives to these standard operations. Specific products, and approaches to using them, are described below.

- **Mobility Impairments**

Some wheelchairs may not fit under standard height computer tables and some computer users do not have enough use of their hands and arms to operate a standard keyboard or mouse.

Input

Equipment, which provides flexibility in the positioning of monitors, keyboards, documentation, and tabletops, is useful for many individuals with disabilities. Plugging all computer components into power outlet strips with accessible on and off switches makes it possible for some individuals to turn equipment on and off independently.

Some technology assists individuals with little or no use of their hands in using a standard keyboard. Individuals who have use of one finger, or have access to a mouth- or head-stick or some other pointing device, can control the computer by pressing keys with the pointing device. Software utilities can create "sticky keys" that electronically latch the SHIFT, CONTROL, and other keys to allow sequential keystrokes to input commands that normally require two or more keys to be pressed simultaneously. The key repeats function can be disabled for those who cannot release a key quickly enough to avoid multiple selections. Keyboard guards (solid templates with holes over each key to assist precise selection) can be used by those with limited fine motor control.

Sometimes repositioning the keyboard and monitor can enhance accessibility. For example, mounting keyboards perpendicular to tables or wheelchair trays at head-height can assist individuals with limited mobility who use pointing devices to press keys. Other simple hardware modifications can assist individuals with mobility impairments. For instance, disk guides can assist with inserting and removing

diskettes; a dedicated hard disk or computer network access can eliminate or reduce the necessity to do so.
For individuals who need to operate the computer with one hand, left- and right-handed keyboards are available. They provide more efficient key arrangements than standard keyboards designed for two-handed users.
Some hardware modifications completely replace the keyboard or mouse for individuals who cannot operate these standard devices. Expanded keyboards (larger keys spaced far apart) can replace standard keyboards for those with limited fine motor control. Mini-keyboards provide access to those who have fine motor control but lack a range of motion great enough to use a standard keyboard. Track balls and specialized input devices can replace a mouse.

For those with more severe mobility impairments keyboard emulation is available, including scanning and Morse code input. In each case, special switches make use of at least one muscle over which the individual has voluntary control (e.g., head, finger, knee, mouth). In scanning input, lights or cursors scan letters and symbols displayed on computer screens or external devices. To make selections, individuals use switches activated by movement of the head, finger, foot, breath, etc. Hundreds of switches tailor input devices to individual needs. In Morse code input, users input Morse code by activating switches (e.g., a sip-and-puff switch registers dot with a sip and dash with a puff). Special adaptive hardware and software translate Morse code into a form that computers understand so that standard software can be used.
Speech input provides another option for individuals with disabilities. Speech recognition systems allow users to control computers by speaking words and letters. A particular system is "trained" to recognize specific voices.
Special software can further aid those with mobility impairments. Abbreviation expansion (macro) and word prediction software can reduce input demands for commonly used text and keyboard commands. For example, word prediction software anticipates entire words after several keystrokes and increases input speed.

Output

Screen output does not present a challenge, but individuals with mobility impairments who have difficulty obtaining output from printers may need assistance from others.

Documentation

On-screen help provides efficient access to user guides for individuals who are unable to turn pages in books.

- **Blindness**

Individuals who are blind cannot access visual material presented on the computer screen or in printed materials.

Input

Most individuals who are blind use standard keyboards, however, Braille input devices are available. Braille key labels can assist with keyboard use.

Output

Speech output systems can be used to read screen text to computer users who are blind. Special software programs (called screen readers) "read" computer screens and speech synthesizers "speak" the text. The availability of earphones for individuals using speech output systems can reduce the distractions for others nearby.
Refreshable Braille displays allow line-by-line translation of screen text into Braille on a display area where vertical pins move into Braille configurations as screen text is scanned. Braille displays can be read quickly by those with advanced Braille skills, are good for detailed editing (e.g., programming and final editing of papers), and do not disrupt others in work areas because they are quiet. Braille printers provide "hard copy" output for users who are blind.

Documentation

Scanners with optical character recognition can read printed material and store it electronically on computers, where it can be read using speech synthesis or printed using Braille translation software and Braille printers. Such systems provide independent access to journals, syllabi, and homework assignments for students who are blind. Electronic versions of documentation can support computer users who are blind if it is delivered in an accessible format.

- **Low Vision**

For some people with visual impairments the standard size of letters on the screen or printed in documents are too small for them to read. Some people cannot distinguish one color from another.

Input

Most individuals who have visual impairments can use standard keyboards, but large print key top labels are sometimes useful.

Output

Special equipment for individuals who are visually impaired can modify display or printer output. Computer-generated symbols, both text and graphics, can be enlarged on the monitor or printer, thereby allowing individuals with low vision to use standard word processing, spreadsheet, electronic mail, and other software applications. For individuals with some visual impairment, the ability to adjust the color of the monitor or change the foreground and background colors is also of value. For example, special software can reverse the screen from black on white to white on black for people who are light sensitive. Anti-glare screens can make screens easier to read. People with low vision also use voice output systems.

Documentation

Scanners with optical character recognition can read printed material and store it electronically on computers, where it can be read using speech synthesis or printed in large print.

- **Hearing or Speech Impairments**

Speech and hearing disorders alone do not generally interfere with computer use. However, advanced speech synthesizers are close enough to human quality to act as substitute voices and thus provide a

compensatory tool for students who cannot communicate verbally. Students with portable systems can participate in class discussions once adapted computers provide them with intelligible speaking voices. Word processing and educational software may also help students who are hearing impaired develop writing skills.

Input

Students with hearing or speech impairments typically use a standard keyboard and mouse.

Output

Alternatives to audio output can assist the computer user who is hearing impaired. For example, if the sound volume is turned to zero, a computer may flash the menu bar when audio output is normally used.

Documentation

Individuals with hearing or speech impairments typically do not have difficulty using standard written or on-screen documentation.

- **Specific Learning Disabilities**

Educational software where the computer provides multi-sensory experiences, interaction, positive reinforcement, individualized instruction, and repetition can be useful in skill building. Some students with learning disabilities who have difficulty processing written information can also benefit from completing writing assignments, tutorial lessons, and drill-and-practice work with the aid of computers. For example, a standard word processor can be a valuable tool for individuals with dysgraphia, an inability to produce handwriting reliably.

Input

Quiet work areas and ear protectors may make computer input easier for individuals with learning disabilities who are hypersensitive to background noise.
Software that aids in efficient and accurate input can also assist. Some people can compensate for high rates of input errors by using spell checkers, thesauruses, and grammar checkers. In addition, word prediction programs (software that predicts whole words from fragments) have been used successfully by students with learning disabilities. Similarly, macro software which expands abbreviations can reduce the necessity to memorize keyboard commands and can ease the entry of commonly used text.

Output

Some individuals with learning disabilities find adaptive devices designed for those with visual impairments useful. In particular, large-print displays, alternative colors on the computer screen, and voice output can compensate for some reading problems. People who have difficulty interpreting visual material can improve comprehension and the ability to identify and correct errors when words are spoken or printed in large fonts.

Documentation

Some individuals with learning disabilities find it difficult to read. Computer documentation provided in electronic forms can be enlarged on the screen and/or read aloud with speech synthesis systems to make.

Next Steps

Continue your exploration of computer technology for people with disabilities by:

- Buying the directory and attending the conference of closing the Gap. To request information, write to P.O. Box 68, Henderson, MN 56044 or call 507-248-3294. Visit their website at *http://www.closingthegap.com/*.
- Contacting technology assistance centers in your state (*http://www.resna.org/taproject/at/statecontacts.html*).
- Joining electronic discussion lists and accessing resources on the Internet. A good place to start is DO-IT's Technology and Universal Design website at *http://www.uw.edu/doit/Resources/technology.html*

Video

A 14-minute video, *Working Together: People with Disabilities and Computer Technology* may be freely viewed online at *http://www.uw.edu/doit/Video/wt_dis.html* or purchased in DVD format. Permission is granted to reproduce DO-IT videos for educational, non-commercial purposes as long as the source is acknowledged.

Source
Table-1 shows Sources.

DO-IT (Disabilities, Opportunities, Internetworking, and Technology) serves to increase the successful participation of individuals with disabilities in challenging academic programs such as those in science, engineering, mathematics, and technology. The National Science Foundation, the State of Washington, and the U.S. Department of Education provide primary funding for DO-IT. DO-IT is a collaboration of UW Information Technology and the Colleges of Engineering and Education at the University of Washington. (SourceIThttp://www.washington.edu/doit/)
(Sources-http://www.e-bility.com/)

Table-1

Slno	Web Links	Details
(Sources-http://www.e-bility.com/)		
1	Another Lens	Displays a magnified view of the area of the mouse cursor.
2	APAR-C	Allows delivery of the APAR (Assessment of Phonological Awareness and Reading) from a computer using either a scan-switch (such as the Discover Switch), or conventional mouse/keyboard, or touchscreen. Also contains all the score sheets and stimulus cards.
3	Black Window	Enhances visibility and reduces distractibility of

		other programs. Fills the screen with a black background, which remains underneath other programs. Minimize or close the program to restore normal Windows appearance.
4	BrailleSurf	An Internet browser for users with vision impairment, which allows a simplified reading of the information available on the Web. Braille Surf shows this information in a text form. This information can then be displayed on a braille bar, or a speech synthesizer can speak it out. The text can also be presented on the screen for people with low vision, and used to provide a fast review of the accessibility level of a website for visually impaired people.
5	Camera mouse	Camera Mouse is a program that allows users to control the mouse pointer on a computer screen using head movement. It is designed to help people who cannot move their hands to control a mouse but who can voluntarily move their head. To use Camera Mouse you need a higher-end USB webcam and a Windows Vista or XP computer. The Camera Mouse software is free.
6	Caring Keys	The Caring Keys software converts the number pad into a full keyboard, similar to a cellphone design. Its purpose is to assist single-handed typists.
7	Clip & Talk	A speech add-on utility for MS-Windows, Clip & Talk speech enables existing Windows applications, such as email readers, Web browsers, word processors, spread sheet programs ... and more. The software takes text from other Windows applications through Clipboard and produces speech. Talk and control is accessed directly from client programs using hot keys. Functions include adjustments for pitch and speech rate and a dictionary editor tool for customizing pronunciations.
8	Click-N-Type	An on-screen virtual keyboard designed for people unable to type using a standard computer keyboard. Requires mouse control, trackball or other pointing device. The software can send keystrokes to virtually any Windows application or DOS application that can run within a window.
9	Clip Text	This program stores bits of text that you commonly need (such as addresses) and pastes them directly into whatever application you are using at the text cursor position. It only requires two key presses (or three key presses in the Win3.1 version) to get the program running and get the text into your document!

10	Docsmartz PDF Conversion Software	PDF to Word conversion and Word to PDF conversion. Free trial downloads available for evaluation.
11	eMacSpeek	A powerful audio desktop that provides a speech interface for Linux users with a vision impairment. By seamlessly blending all aspects of the Internet such as Web surfing and messaging, Emacspeak speech enables local and remote information via a consistent and well-integrated user interface.
12	eLr Enhancing Internet Access	The EIA system is a specialized Web browser, suitable for touchscreen systems, with fully integrated Web awareness, assessment and training modules. It is designed for Internet training and access for people with disabilities and other special needs.
13	e-Speaking	An easy and affordable software solution enabling users to control their computer, dictate emails and letters, and have the computer read documents back.
14	Festival Speech Synthesis System	Festival is a general multi-lingual speech synthesis system developed at CSTR. It offers a full text to speech system with various APIs, as well an environment for development and research of speech synthesis techniques. Version 1.4.3 (January 2003) is the most recent version available free for unrestricted use.
15	Genie Talking Web Browser	The Genie who Reads and speaks is a talking web browser. It will read any web page or you can highlight a chosen text and it will read it for you with the help of a little blue Genie. The software also has a small MP3 player installed and allows you to search 12 search engines as well as individual searches.
16	Help Read	This program uses a text-to-speech synthesizer and can read text files such as web pages, e-books, and text in the windows clipboard. It was developed by the Hawaii Education Literacy Project (HELP) and is distributed freely over the Internet. The software includes settings for pitch, volume and speed as well as single word highlighting.
17	iZoom	A free professional grade screen magnifier and reader from Assist.
18	LAT Kids: LifeShare Assistive Technology Project	LAT Kids develops software and makes it available free of charge to anyone who finds it useful, including two augmentative communications products - Speak for Yourself and IAM.

19	Linux Accessibility	Information about Unix and Linux Shareware and Freeware, including: visual cursor enhancers, braille and sign language utilities, optical character recognition (OCR), keyboard modifications, magnification, on-screen keyboards, voice input and output applications.
20	Literacy Online	Mirror of Literacy Online web site. This is the full (except for external links) set of files (.htm/.js/.css/.gif/.jpg) that constitute the Literacy Online web site.
21	Microsoft Accessibility	Information on Microsoft's accessibility options, including downloads and tutorials.
22	MultiMail	An email program with many accessibility features.
23	Project: Possibility	A nonprofit, community service project committed to creating innovative open source enabling software for the people with disability, including educational tools, word prediction, music in screen-reader friendly format and accessible currency converter.
24	Mouse Wrap	Free software from QD Wares that enhances the mobility of the Windows mouse pointer. When the pointer touches the edge of the screen it will instantly appear on the opposite side of the screen and has been used by people with disability who cannot easily move their mouse upwards.
25	Read Please	A free text-to-speech reader designed to make web sites and email more accessible to those with reading difficulties, such as dyslexia, by reading content aloud.
26	SayIT	SayIT is an integrated suite of software available in four components: scanner, orator, mouse and speech synthesizer. The software is designed to assist anyone who is losing or who has lost the power of speech, as well as people with limited fine motor skills and muscle coordination in their fingers and hands.
27	SENIT	Special needs educational IT resources including free software downloads, tips, tutorials and equipment ideas.
28	Super Magnify	Magnifies portions of your screen up to 15 times. With special interpolation routine to maintain detail when magnifying.
29	Talking desktop	Talking and listening software that allows voice control of the computer. Features include voice email, voice browser and word processing activities using dictation.

30	Talking Keyboard	Free software that 'enlivens' your keyboard by telling the user what key has been pressed. Using the software controls in its main window, you can attach built-in or user-defined WAV sounds to specific keyboard events. This product will helpful as a learning resource for kids and for people with vision impairments.
31	Text Aloud	Converts any text into voice and even to MP3. Text Aloud resides in your Windows tray, always ready to read text aloud from your e-mail, Web pages, and documents on your computer or portable MP3 player. You can listen immediately, or save it as a WAV or MP3 file that you can listen to at your convenience. Text Aloud supports additional speech engines for other languages. It includes support for TXT files of unlimited size, so you can bring large e-books in as one article. It allows you to create 10 minutes of spoken audio in as little as 12 seconds. Also available, speech software options that offer personalized services, such as News Aloud, Weather Aloud, Stocks Aloud, Groups Aloud.
32	Text-To-Speech Software	This software reads text words to you with a choice of voices. The text words may be on the screen, in the clipboard, from a text file or other source. It also supports converting text to audio formats using MP3 or WAV. It uses 'Text to Speech' technology to synthesize natural sounding speech from ordinary text. It can also be used to create MP3 files from your email, news articles, and any text you want, download to your portable MP3 player and listen to it later.
33	Thinking Man's Dictionary	This program is an ideal pop-up utility for when the right word is eluding you. It includes a powerful thesaurus and a dictionary, which can check the spelling of individual words as well as provide you with a list of similarly spelt words. The package includes a version of the program, which automatically links to the popular freeware dictionary Word Web (see below), for looking-up definitions of words.
34	Type Sign Writer	Learn to speak in sign language, just type in the key you want and a picture view of that letter will be shown.
35	Web Ferret	Web Ferret lets you search the web quickly and thoroughly by instantly submitting your search query to multiple search engines, and displaying all of the results in a single concise window. Results can be sorted by page Name, Address,

		Source or Abstract. You can also choose the search engines to query, the number of results to return, and you can enable features like duplicate removal or keyword suggestions, to help you find better results.

Check on the thumbnails to see the devices you're interested in, or just go to the first product. (Source-http://www.computerworld.com)

Impulse electromyograph

Eyegaze Edge eye-motion sensor

Jouse2 "sip and puff" system

SmartNav 4:AT head-motion tracker

Camera Mouse head-tracking software

Light operated mouse and keyboard

NoHands foot-operated mouse

BigKeys LX keyboard

ZoomText screen magnifier/reader

InfoScan TS Elite scanning pen

Intel Reader e-book reader

Braille+ Mobile Manager PDA

BrailleNote Apex note taker

soundAMP amplification app

Computer and Software Accessibility for the Disabled — By Lisa Richards, Educational Outreach Writer

Computers, websites, and software are always searching to improve their usability by consumers. Accessibility by all users is always a very important issue. What may be usable by some people may not be usable by someone with a disability. Those with learning disabilities process information differently and therefore may struggle with reading online or using certain kinds of software. Those with dyslexia and other vision impairments face several issues with accessibility. The color scheme of a webpage can also be a big issue for the visually disabled. There is software that can read the content of webpages aloud and braille keyboards.

Software can also be installed that visually alerts the user of sounds from the computer or webpage for individuals with hearing impairments. Those with hearing impairments can benefit greatly through the usage of computers and the Internet since so much contact online is text based. There are many adaptive keyboards and mouse devices for those with motor disabilities. There are also devices that allow a user to speak commands to the computer instead of having to use a standard keyboard and mouse. The following resources are provided to teach more about accessibility issues that the disabled face and options for to help make computers and the Internet a user-friendlier place for everyone.

➢ Cognitive Impairments and Learning Disabilities

1. Computers and People with Learning Disabilities ? A video presentation from the University at Washington students and workers of the university with learning disabilities demonstrate strategies and techniques for using computers.
2. Computers and the Writing Process for Those with LD ? A write-up on LD Online by Richard Wander man about how computers affect the writing process for individuals with learning disabilities.
3. Selecting Software for Students with Learning Disabilities ? This .PDF provides general guidelines to help educators select software for use by the learning disabled.
4. Using Computer-Based Tests with Students with Learning Disabilities ? This article for educators discusses methods of composing computer-based tests so that they are usable by students with learning disabilities.
5. Assistive Technology and Learning Disabilities? South Carolina Assistive Technology Program's provides a list of assistive technology tools and built in accessibility options for Apple and Microsoft.

➢ Visual Impairments

1. An Educator's Guide to Visual Disabilities ? This article defines issues encountered by those with visual disabilities while using computers as well as provides helpful software and solutions.
2. Buying a Computer? Guide for the Blind ? The American Foundation for the Blind composed this article for those with visual impairments to learn what to look for when purchasing a computer.
3. Computer Aids for the Blind ? The University at Buffalo's Assistive Technology Training Online Project provides this list of keyboard and mouse alternatives for its blind population.
4. Color Blindness Simulations? Enter a webpage into this simulator to see what it looks like to those who are colorblind. These simulators can also help those designing accessible websites.
5. Assistive Technology for Blind or Visually Impaired College Students? New Jersey Colleges Adaptive Technology Center's guide to different adaptive technology for the visually impaired.

➢ Hearing Disabilities

1. Technologies for Students wit h Hearing Impairments? Students with hearing impairments are still able to use computers without issue thanks to many assistive devices and software.
2. Broadband Internet Access for the Hearing Impaired ? The National Association for the Deaf advocates for accessible Internet for everyone. The Internet can help the deaf communicate more efficiently.
3. Computer Leaning for Deaf Children? This article reviews how teachers can provide an educational learning environment for deaf children while still using computers.

➢ Motor and Dexterity Impairments

1. Web Accessibility for those with Motor Disabilities? This webpage provides descriptions and pictures of different assistive technologies that can help those with motor disabilities. Adaptive keyboards, eye-tracking devices, voice recognition software and other computer adaptations can help those with motor disabilities use technology fluently.
2. Using Handhelds to Help People with Motor Impairments? Those with Muscular Dystrophy and other nervous system disorders can benefit from using devices such as a mouse and keyboard. The disorder affects their gross motor control but not their fine motor control.
3. Designing Interfaces for Children with Motor Impairments? This paper follows a study in which children with motor disabilities were observed using laptops.

➢ General Accessibility Resources

1. Computers Assisting the Handicapped ? Chris Murphy of Virginia Tech wrote this article on how computers can help those with disabilities.
2. Types of Assistive Technology? Microsoft provides descriptions of assistive technology products.
3. Internet and Disability Related Resources? The Internet Society Disability and Special Needs Chapter have composed this list of resources concerning the Internet and special needs individuals.
4. Telecommunications Access for People with Disabilities? The FCC requires telecommunications manufacturers and providers to make their equipment and services accessible to all people.
5. Enabling People with Disabilities ? This Speed Matters webpage explains the benefits of high speed Internet for those with disabilities.
6. Assistive Technology Industry Association ? The ATIA is composed of organizations that provide assistive devices and services to those with disabilities.
7. Use of Computer Technology to Help Students with Special Needs ? Children are now growing up in the "digital age," and computers are so important to their educational environment. Special needs children can also benefit from computer-based learning.
8. Computers and Special Needs? The usage of computers by special needs children can help enhance their self-esteem and language skills.
   (Source-http://www.mapcon.com/computer-and-software-accessibility-for-the-disabled)

"The number one way to succeed on the job is to use technology."
Dr. Michael Ryan (DyslexiaHelp's contributing expert)

Today's technological age has brought forth a number of very good computer programs and tools to help individuals with:

- Listening & speaking
- Reading & spelling
- Writing & organization

We have found the following software programs and assistive devices successful in helping to address the areas that affect dyslexic individuals. These technologies cannot replace direct intervention, but they can augment a therapy program. Training from a professional may be required to get the best results. These technologies help:

- Accommodate for challenges
- Increase self-confidence at home, in the classroom, or on the job

We update this page as new technologies are developed, so visit often!

- Listening & Note taking
- Phonics
- Reading, Writing, & Study Support
- Text-to-Speech
- Writing & Spelling
- Online Tools

Livescribe Smartpen - Various Prices

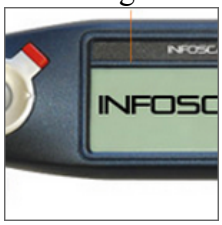
Video Tutorial

School age and up

The Live scribe Smart pen will record lectures that you're listening to while you take notes, so you won't miss any information. You can go back and listen to the recording to fill in any hard-to-clarify areas.

Other Features

Good for people with poor handwriting



Note-taking pens: InfoScan 2, InfoScan TS, InfoScan TS Elite

School age and up

With these pens, you can scan up to 20,000 lines of text. Store the information on the device or transfer it to a word processor where the text can be edited. The InfoScan 2 is a simpler version, used only for text

storage or transfer, while the TS and TS Elite have more functions. Both the TS and TS Elite have touch screens for easy navigation to find the stored text, while the TS Elite has text-to-speech capabilities, allowing the scanned text to be read out loud.

Reading pens: ReadingPen 2, ReadingPen TS

School age and up

Both of these reading pens have scanning capabilities, but they are designed for reading comprehension. They scan the text, enlarge the font to make it easier to read, read the text out loud, and display syllabic breakdown of the words. The TS has additional features, including games to improve vocabulary, a thesaurus for looking up synonyms, and more.

UberNote - Various Prices

School age and up

Ubernote is a basic note-taking site where you can organize all your class notes and add images and sounds to enhance them.

PHONICS

Earobics - Various Prices

Video Tutorial

Ages 4-10

This software offers an individualized learning mechanism to help students with reading difficulties in early elementary school to catch up to their peers. The program focuses on:

- Phonemic awareness
- Phonics
- Vocabulary
- Fluency
- Comprehension

Other Features

- Printable progress reports for parents and teachers
- Customizable according to individual needs

Read, Write & Type! Learning System - Various Prices

Video Tutorials

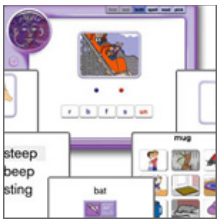
Ages 6-9

This is a reading software program that utilizes a multi-sensory, interactive approach suitable to children with a variety of learning styles. Through the use of colorful games, animation, and music, the program targets a child's:

- Phonemic awareness & phonics
- Reading & writing
- Spelling & typing

Other Features

- Printable progress reports for parents and teachers
- Customizable according to individual needs



Simon S.I.O. (Sound It Out) - Various Prices

Ages 5-13

Simon S.I.O uses a personal tutor to deliver individualized instruction and corrective feedback to ensure students acquire the critical skills they need to become readers. Students practice their learning and increase fluency by:

- Building new words
- Recalling learned words
- Guided spelling
- Discriminating between words
- Reading controlled texts

Sortegories - Various Prices

School age and up

Sortegories, an Orton-based web supplement to the LANGUAGE! Curriculum is designed to help build vocabulary, literacy, and reading comprehension. The software has 36 different units, beginning with basic phonics, and progresses to word- and sentence-building. Sortegories meets The Common Core State Standards.

Talking Fingers - Various Prices

Ages 5-9

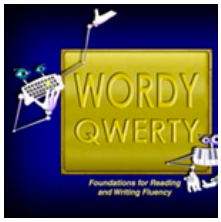
Talking Fingers is an approach to reading and writing in which the typed or written text children create with their fingers is speech made visible. The Talking Fingers method teaches children to link the sounds in words to the appropriate letters and their corresponding keystrokes.

Read more about this on our blog!

WordMaker - Various Prices

Ages 5-13

Students who lack proficient decoding skills struggle to achieve fluency and comprehension. Using varied activities, **Word Maker** provides a systematic and interactive approach to teaching spelling, reading, and writing skills.



Wordy Qwerty: Foundations for Reading & Writing Fluency - Various Prices

Video Tutorial

Ages 7-9

Wordy Qwerty, the sequel to Read, Write & Type! Learning System, is designed to refine the foundational phonemic awareness and phonics knowledge students gain while using Read, Write & Type! and increase students' phonological and morphological sensitivity.

READING, WRITING, AND STUDY SUPPORT

Barton Reading and Spelling System - Various Prices

School age and up

This is a one-on-one tutoring system that will improve the spelling, reading, and writing skills of children, teenagers, and adults with dyslexia or another reading disability. The system teaches people how to tutor people with dyslexia. It is a research-based tutoring system that contains all of the essential components of reading instruction required by the No Child Left Behind Act. It is based on Orton-Gillingham.

ClaroRead - Various Prices

School age and up

The ClaroRead line of educational software provides reading and writing support tools for struggling learners, or anyone looking to make the writing process easier. The software includes text to speech, word prediction, spell check, and more in one easy to use program. The software is available for both PC and Mac.

GrammarCheck - Free

School age and up

This online grammar checker will show (and suggest corrections for) grammar errors in your essay or other written document.

iPad - Various Prices

Video Tutorial

School age and up

The iPad has several tools and features that can be helpful with learning, such as:

- Touch-screen technology in either portrait or landscape
- Built-in screen reader
- iBook application for reading, listening to, and buying new books

Other Features

- Note application for managing to-do lists

- Calendar application

Nook - Various Prices

School age and up

Barnes and Noble offers its Nook, which has a "read and record" feature that allows you to record your own narration to books. In addition, the Nook has its own set of interactive games.

Kurzweil 3000 - Various Prices

Video Tutorial

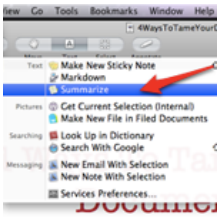
Ages 8 and up

Kurzweil 3000 allows struggling readers to learn the same content as their peers in different ways with this reading, writing and learning software solution. Kurzweil 3000 supportsUniversal Design for Learning, and offers:

- Fluency
- Vocabulary
- Comprehension
- Writing
- Study skills
- Test-taking support

Other Features

- Text-to-speech capabilities for documents and web pages
- Color highlighters
- Notes and bookmarking



Text Summarizers for Mac & Windows - Free

School age and up

These text summarizers enable your computer to give you the gist of a body of text. Summarize Word documents, PDF files, and web pages.

TEXT-TO-SPEECH

Amazon Kindle - Various Prices

Video Tutorial

School age and up

This portable electronic reading device allows you to electronically read books, newspapers, blogs, and magazines, all of which can be accessed and downloaded wirelessly through the Kindle device.

Classmate Reader - $259

Video Tutorial

School age and up

The Classmate Reader is a hand-held device that reads textbooks and study materials aloud.

Other Features

- Highlighting capabilities
- Bookmarking
- Customizable reading speed and font size
- Speaking dictionary

FlameReader - Various Prices

School age and up

FlameReader allows you to read text aloud in any computer with customized voice, speed, and pitch. It also converts text to mp3, reads text in other applications, and can translate between seven different languages.

Intel Reader - $599

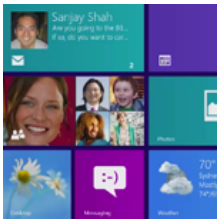
School age and up

The Intel Reader is a hand-held, mobile text-to-speech device that highlights the words while reading aloud. The reader can:

- Take a picture of text to have read aloud
- Jump to specific pages
- See the actual document from which the text was scanned

Other Features

- Customizable voice speed
- Can play and produce mP3s to transfer to other devices



Narrator - Free

Video Tutorial

School age and up

Narrator is a screen reader that reads text on the screen aloud and describes events like error messages so you can use your PC without a display.

Natural Reader - Various Prices

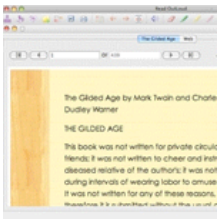
Video Tutorial

School age and up

This text-to-speech program assists with reading by converting text on web pages, in e-mails, PDF files, and in applications like Microsoft Word to words spoken in a natural voice.

Other Features

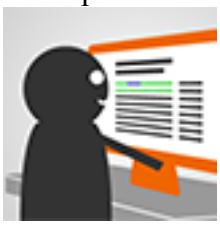
- Can convert text into MP3 and WAV files



Read: OutLoud 6 - Various Prices

School age and up

This program makes it easy to provide access to the new electronic books required in IDEA, and the included web browser makes the internet fully accessible. It provides accessibility supports like text-to-speech and study tools that help you read with comprehension.



ReadSpeaker - Various Prices

School age and up

ReadSpeaker is a text-to-speech provider that is applicable to any website. It's easy to use and with a click of a button, any text on your website is converted to speech.

Universal Reader - $59.95

Special Ed - Learning Disabilities Software

Context-based instruction that helps special education students overcome their difficulties with comprehension, problem solving, organizing, and communication skills.

Featured Products

Reading Skill Builder
Helps student's transition to read at higher levels - on the web!

Grammar Fitness Online Edition - Basic
Web-based, interactive basic grammar program with progress tracking!

BROWSE SOFTWARE TITLES BY SUBJECT:

- Reading Comprehension Basic
- Reading Comprehension Intermediate
- Vocabulary
- Process Writing
- Writing Mechanics - Grammar
- Math
- Bundles

MERIT SOFTWARE KEY BENEFITS:

In-depth Instruction - Provides a structured and supportive environment that enables students to apply skills while they are learning.

Intensive Concentration - When students encounter areas of difficulty, they can choose to access several forms of assistance. Explanations, tips, examples, and options to retry skills maximize learning

opportunities.

Personalized Feedback - Context-sensitive tips help college prep students accept responsibility for their weaknesses and build their confidence as learners.

Automatic Scoring - Teachers are able to quickly measure student areas of concern, using our Teacher Program Manager, and plan lessons in response to specific needs.

Learn more about how Merit helps teachers; tutors, and students achieve academic success.

- **(Source-http://www.meritsoftware.com/)**

Selecting Software for Students with Learning Disabilities
Recommended Software

Fast For Word Literacy/Literacy Advanced (Scientific Learning)

http://www.scilearn.com/products/index.php
This program uses a game format to systematically train auditory processing skills to improve listening and language processing (as a basis for reading and functional listening skills) from the phoneme to short paragraph level. The 50-minute protocol strongly recommends 5 days a week until all skills are mastered (approx. 6-8 weeks for most students).

Literacy lays the basic foundation and Literacy Advanced gives the students new ways to build the same skills as the information they process gets more complex and moves into more reading.
The research basis and individualization of the rate of delivery of the stimuli (via internet connection) to each student to keep them successful, but challenged and motivated, makes this the gold standard for software programs.

Students have to listen, watch and respond using a keyboard or mouse so other integrated skills are built as well, such as visual processing and visual memory, even though they are not a direct focus.
This relates to long-term retrieval because students develop strategies that have to be implemented daily while the stimuli move faster. Students do well if they remember and replicate strategies that have worked for them in the past. Part of the instructor "monitoring" includes discussing, building, and reinforcing the use of strategies that are effective in raising scores. This language can then be transferred to other types of storage and retrieval strategies.

Cognitive Deficits: Long Term Memory
Compensatory Memory Strategies: Chunking (Parrot Software)
http://www.parrotsoftware.com

Chunking has lists of items that can be controlled in number of items and types of categories. It is simply a task in grouping by category and then remembering through either recognition from a list, or by typing in responses. It does not go further in developing chunking techniques. It is best used as a starting point for the concept of grouping, and then true chunking techniques for better and more functional use can be provided by non-computerized instruction.

Memory Challenge (Critical Thinking Software)
http://www.criticalthinking.com/series/094/index_c. html

Memory Challenge uses a visual memory process involving shapes and color. Instructor can control number of items, number of different shapes used, and number of different colors used. Presentation time can be controlled, from one to 60 seconds. Unique to this program are controlled distractions, which can be used to challenge long-term retrieval. The type of distractor (Blank, Visual, Question, None) and duration from 0 to 120 seconds can be controlled.

Brain Fitness Program (Posit Science)
http://www.positscience.com/programs/buy.php
Through adaptive training that is continuously customized for an individual user's brain performance, the training program clearly defines goals and shows progress history and achievements.
The training program stores complete training data and presents it in a user-friendly set of feedback/progress screens that occur at the end of each exercise and the end of each training session. In addition (optionally, at the user's request), the training program securely and confidentially uploads all training data where more detailed analyses and feedback can be performed by a phone call to Posit customer service.

The training program presents instructional material in printed form (for reading-focused learning styles), in example form (for auditory learners), and through practice (for experiential learners); in addition the training exercises continuously adapt to the brain performance of each individual learner thus maximizing the learning that an individual gains.

Selecting Software for Students with Learning Disabilities
Cognitive Deficits: Long Term Memory 5
Selecting Software for Students with Learning Disabilities 6
Short-Term Memory and Working Memory

Definition
These interrelated memory areas involve immediate storing of information, but they serve distinct roles in processing and eventual comprehension of information. Behavior aspects such as inattention, anxiety, and poor concentration may affect both short-term memory (STM) and working memory (WM).
Short-term memory is an element of cognitive efficiency or automatic processing. Closely related to memory span, STM requires holding information for a few seconds and then using it before it is lost or stored for future use. From this view, STM may be considered a first step to "permanent" storage.
In contrast, Working Memory involves not only memory span, but also manipulation of information that is in immediate awareness to solve given problems. Thus, WM has multiple components such as sequential processing, number ability, and executive processing or planning.

Assessment Measures
Short-Term Memory
On the WJ III, the STM cluster includes two tests:
- **Numbers Reversed (Test 7)** and
- **Memory for Words (Test 17).**

Both tests measure memory span, although Numbers Reversed may be considered a measure of WM. The WAIS-III does not specifically measure STM.

Working Memory
On the WAIS-III, three tests comprise the Working Memory Index: **Arithmetic (Test 6)**;
- **Digit Span (Test 8)**; and
- **Letter-Number Sequencing (Test 13)** .

These tests require listening to and quickly storing information in

- **Selecting Software for Students with Learning Disabilities**
- **Cognitive Deficits: Short Term and Working Memory 7**
- **Selecting Software for Students with Learning Disabilities**

STM and then moving to WM where mental manipulation and visualization of information is needed. Additionally, Arithmetic requires recognizing specific processes (e.g., adding, subtracting) to use.
On the WJ III, WM includes:

- **Numbers Reversed (Test 7)**; and
- **Auditory Working Memory (Test 9).**

The latter involves mentally dividing information into two groups (numbers and words) and putting them in ordered sequence.

Functional Implications
People with good STM/WM often do well with rote memorization as well as being able to follow lengthy oral directions. They generally do well grasping lecture information.
A student with either a short-term or working memory deficit may encounter difficulty holding information long enough either to mentally manipulate it or to comprehend it. As a result, the student may struggle to relate the information to on-going situations (e.g., lectures) or may grasp only bits and pieces of what she/he hears. Thus, the student may not proficiently process, comprehend, and/or store information.

Cognitive Deficits: Short Term and Working Memory
Instructional Goal
For short-term memory, students will briefly retain and then retrieve information. For working memory, students will provide responses that reflect their ability to retain and mentally manipulate information.

Instructional Considerations
Modality of presentation and modality required in responding need to be considered. Students may exhibit different strengths with verbal as opposed to visual information.
Recognition of information that was retained (e.g. choosing from a list) is easier than retrieval of the specific information. This should be considered in task difficulty and in determining progress.
Within specific programs, do not increase difficulty levels too quickly. Improvements may be seen with specific information in specific programs, and not accurately reflect functional improvements.
It may be helpful to use software to present and practice mnemonic strategies with this material (see long-term retrieval). Academic materials used in the software should be within the student's abilities.

Software Characteristics Format should be motivating.
The task of this software is to train students to attend to multiple stimuli and/or stimuli, which increases in complexity and length. Because this type of memory practice can be boring, it is important that software provide visual or auditory reinforcement to motivate students to continue practicing. Game formats are often the most successful in generating motivation, but the student must be taught to apply the skills she/he is learning to every day activities in and out of school.

Software should require mastery before student can advance to a higher level.
Confusion and frustration will result if a student advances before she/he has mastered the current memorization task. Often the instructor must monitor students to be sure that this software is being used properly.

Selecting Software for Students with Learning Disabilities
Cognitive Deficits: Short Term and Working Memory 9
Selecting Software for Students with Learning Disabilities
Software should provide a variety of activities.
By working in a variety of activities, a student can monitor the ways in which her/his mind functions in the context of these different activities. More importantly, these activities provide the student with experiences, which reveal how her/his particular mind works. Some tasks will be easier than others depending upon the individual student. Software scores can be used as tools to illustrate a student's learning strengths and weaknesses.

Software should provide frequent feedback.
Short segments with feedback provided allow the student to take in the information they are learning about themselves more effectively. If a task is too long or complex this benefit will be compromised by frustration due to repeated errors.

Reading and spelling tasks should be matched to the student's abilities.
Students should be able to attribute their scores to memory practice alone. Errors in reading or spelling contaminate information the student needs to learn about efforts to improve short-term memory.

References

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- Wilkinson, G.S. (2005) *Wide Range Achievement Test 3 (WRAT 3)*. Lutz, FL: Psychological Assessment Resources, Inc.
- Koslin, B.L., Koslin, S., Zeno, S.M, & Ivens, S.H. (1989) *Degrees of Reading Power*. Brewster, NY: Touchstone: Applied Science Associates.
- Squires, David & Preece, Jenny (1999) Interacting with Computers. Elsevier Science B.V.
- The Psychological Corporation (2002) *Wechsler Adult Intelligence Scale (WAIS)* 2002, San Antonio, TX: The Psychological Corporation
- The Psychological Corporation (2001) *Wechsler Individual Achievement Test (WIAT II)* 2001, San Antonio, TX: The Psychological Corporation
- Woodcock, R.W., McGrew, K.S. & Mather, N. (2005) *Woodcock- Johnson III*. Chicago: Riverside Publishing Co.

Selecting Software for Students with Learning Disabilities
Software References

- **Academic Challenge Cup**
  Critical Thinking Books & Software © 1997

The Critical Thinking Co. P.O. Box 1610
Seaside, CA 93955-1610

- **Mac/Windows**

Single License: $59.99
10 user license: $236.99 Unlimited Site License: $ 825.99
http://www.criticalthinking.com/getProductDetails. do?id=04003&code=c

- **Ancient Wisdom Cambrix Publishing © 1995**

Cambrix Publishing, Inc 9304 Deering Ave Chatsworth, CA 91311

- **Mac/Windows**

Currently out of production

- **Brain Fitness Program**
  Posit Science Corporation, © 2006-2007

Posit Science Corporation 20100 S. Vermont Ave. Torrance, CA 90502

- **Windows**

Single license: $395.00
Two user license (1 PC): $495.00
Two user license (1 PC + Coaching Kit): $595.00
http://www.positscience.com/programs/buy.php

Principles of Accessible and Universal Design

"Accessible Design" calls for design that includes the needs of people whose physical, mental, or environmental conditions limit their performance. "Universal Design" aims to extend standard design principles to include people of all ages and abilities, but remains at the level of generality, so it does not address all the specific needs of any particular disability.
But even for people who do not have any specific physical or mental characteristics that affect computer use, it has been found that adopting universal design principles can reduce fatigue, increase speed, decrease errors, and decrease learning time for all users. In many ways, universal design addresses the larger issues of usability by making things easier for everyone.

- **General Principles**

- Allow for flexibility

Provide choices in features and ways that tasks can be accomplished
Accommodate right- and left-handed use
Allow the user to customize settings whenever possible
Keep in mind that people may be using adaptive technologies

- Be simple and intuitive

Do not design something differently from user expectations just to be different
Eliminate unnecessary complexity
Provide feedback

- Minimize errors

Provide warnings
Build fail-safe features when possible
Do not establish patterns when you want people to pay attention

- Include redundant modalities

Redundancy provides flexibility for different user preferences, system configurations, or user abilities. This can be accomplished by using more than one way to represent, display, and enter data, such as:

Using both a beep and a menu bar flash to notify a user of an error
Using text to label images
Redundantly allowing a user to issue commands by typing or selecting something with a pointer

- Avoid side effects

Side effects are actions that occur as the result of user actions that do not seem to the user to be related to the primary goal of the action. For instance, when starting a program that changes system configurations (such as screen and sound settings) it should change them back when the program is not being used.
Side effects should be avoided because they cause particular problems for novice users and disabled users who may have difficulty detecting or correcting certain types of side effects.

Web accessibility

The principles of design listed above apply to both software and web design. Below are more web-specific tips.

Tips for building accessible websites

Labeling and markup

1. Provide a text equivalent (ex: ALT text, <LONGDESC>) for all non-text elements, especially those related to navigation. Provide NULL values for unimportant graphics (such as divider bars).
2. Conform to current web standards: XHTML 1.0, HTML 4.01, CSS 1.0.
3. Use cascading style sheets (CSS) to control presentation and layout rather than presentation elements and attributes, but organize documents so they can be read without style sheets.
4. Identify row and column headers for data tables.
5. Use the <LONGDESC> tag to summarize graphs and charts.
6. Provide captions or transcripts and descriptions of multimedia used.
7. Provide alternate content for scripts, applets, and plug-ins to compensate for the potential loss of information.
8. Use the <LANG> attribute for screen readers that support it.

Formatting

1. Use relative units in CSS—em or % instead of cm, pt, or px.
2. Use ordered lists or number the lists on your web pages.
3. When using tables, do not use structural markups for visual formatting.
4. Validate your work either using a validation and/or correction tool.

Providing alternatives

1. Provide ways to skip over navigation links and get to the main content of your web pages.

Linking

1. Create logical tab order through links.
2. Avoid hyperlinks longer than 10 words.
3. Use descriptive links rather than “click here” to insure that links make sense out of context.
4. Clearly identify the target of each link.

Displaying

1. Provide enough contrast between text and background color.
2. Make sure that tables make sense when read left to right, top to bottom, as this is how screen readers work. Identify row and column headers, and use the <CAPTION> and/or summary attribute and headers to describe the contents.
3. Provide a <NOFRAMES> option and use meaningful page titles if using frames.
4. Use client side rather than server side image maps and provide redundant text links.
5. Avoid blinking, flickering, or moving elements on your web pages.
6. Provide closed captions for all audio content that contains useful information or provide transcripts for all audio content.

Tips for checking the accessibility of your website

1. Turn off graphics
2. Turn off sounds
3. Check the contrast by viewing the page in gray scale
4. Turn off style sheets
5. Turn off scripts, applets, or other programmatic objects
6. Use the largest font size allowed by a browser
7. Resize the browser window
8. Select all text and copy it into a word processor to make sure it makes sense
9. Use an automated accessibility tool to check your website

Details of ICT Products for CWSN

Annex- A

S. No.	Product/ Devices	Source of procurement	Purpose	Approx. Price	Categories
1.	Computer with a printer, CD, pen drives, etc.	Local resources	To enable use of ICT	From Rs. 40,000	All CWSN
2.	Low Tech Communication chart – pictures / words	Vidya Sagar	communication	1000	ID, HI & ASD, CP
3.	Low Tech Communication charts – Tactile	Vidya Sagar	Communication	1500	ID, VI & ASD, CP
4.	Low tech lessons charts – pictures	Vidya Sagar	Academic participation	1000	ID, HI & ASD, CP
5.	Communication software – Slate	Arathi Abraham Chennai	Communication	10,000	ID, ASD & CP
6.	Alternate access to computer/communication devices – Aditi (hardware)	Mindtree, Bangalore	Independence in communication/ computer access	750	CP
7.	Complete access to the computer – (Sweep sticks software)	Vidya Sagar – Anna University initiative	Independence in communication/ computer access	Free download	CP
8.	Math made simple – Scan mode ,	Vidya Sagar – Anna University initiative	Independence in academics	Free download	ID, ASD & CP
9.	Indian Picture Symbols for Communication	Indian Institute of Cerebral Palsy	A library of culturally & linguistically appropriate digitized picture icons and a software to navigate this library to make lo-tech communication displays for students who are	5000	ID, HI, ASD & CP

S. No.	Product/ Devices	Source of procurement	Purpose	Approx. Price	Categories
			non-readers for Participation in academic and other communicative activities.		
10.	GupShup Software	Indian Institute of Cerebral Palsy	Students who cannot use speech as their primary mode of communication and depend on AAC symbols to participate in academic and other communicative activities use the software. This software is used to produce material such as topic based theme sheets, storybooks, chat books and talking cards with text and pictures. At the same time it gives the users a voice to be used for all these material and can be adapted for people who are unable to use a regular keyboard / mouse.	7000	ID, ASD & CP
11.	SANYOG - a communication software	IIT Kharagpur And Media Asia Lab	A software to generate grammatically correct natural language sentences from	Rs. 5000/ - 7000/-	ID, HI, ASD & CP

S. No.	Product/ Devices	Source of procurement	Purpose	Approx. Price	Categories
			selected icons Within-built Text to Speech (TTS) system with word prediction in Bengali, Hindi & English for voice output and hardware interface to facilitate access. Can be used by middle and senior school students for writing.		
12.	Kathamala – a voice output communication aid (VOCA) developed in collaboration with Micro Solutions Ltd.	MICRO SOLUTIONS 1 Ashok Row, Gangulibagan, Kolkata - 700 084 West Bengal, India Email:giswebel @rediffmail.co m	Instantly creates interest in an unfamiliar communication partner and immediately helps in mainstreaming the user. This voca with 16 messages and tactile switches can also be used as teaching tool for all children, disabled and non-disabled, at the pre-primary level as they are attractive and enforce cause and effect function	4000	ID, ASD & CP
13.	'GupShup Book' developed in collaboration with Micro Solutions Ltd.	MICRO SOLUTIONS 1 Ashok Row, Gangulibagan, Kolkata - 700 084	This device is a 10 leaf, attractive battery operated album for the use of pictures, photographs and	2500	ID, ASD & CP

S. No.	Product/ Devices	Source of procurement	Purpose	Approx. Price	Categories
		West Bengal, India Email:giswebel @rediffmail.com	messages for instant communication. Photographs, message cards, picture cards can be placed inside the leaves to give a visual cue to the user. The switches are tactile and to be accessed directly.		
14.	Big red switches and adapted mouse	IIT Kharagpur SamitPatra	This switch can be used manually and can be attached to an adapted USB mouse. Can work with much software such as Sanyog, Gupshup, and AkashBani and also can be used to run PowerPoint talking books.	Rs. 750-/to begins with. This is based on individual needs	ASD & CP
15.	CD on sign language, core	VAANI	Helps in communication, language development and comprehending concepts	Rs. 500/-	HI & ASD
16.	Multi-media CDs (reading, writing, math's, EVS, etc.)	Azim Premji, Pratham, Educom	Enhancing learning skills across subjects	From Rs. 100/- to Rs. 500/-	All types of CWSN

Visual Impairment

S No.	Name	Source of procurement	Purpose	Approx. Price
1.	Screen reading software- NVDA	Saksham Trust	Installed in the computer- audio software which reads out all on the screen	Rs 4000
2.	Talking calculator	NIVH / Saksham Trust / other organizations working with VI	Can be used with VI children in classroom setup	Upto Rs. 500/-
3.	Talking watch/ Braille Watch	NIVH / Saksham Trust / other organizations working with VI	Can be used with VI children in classroom setup	
4.	Smart Cane	Saksham Trust	Cane installed with electronic device that detects obstruction within a distance of 1 meter. Assists independent mobility	Rs. 3000/-
ICT/ Assistive Devices for Persons with Low Vision				
5.	Reading stands	Local purchase	Within Rs. 500/- to Rs.1500/-	**To facilitate literacy**
6.	Lamps	Local purchase	Within Rs. 500/- to Rs.1500/-	
7.	Magnifiers (hand held or any other)	Local purchase	Within Rs. 500/- to Rs. 1500/-	

Note:

For children with multiple disabilities (different combination), items and products could be selected from the above list, based on the need of the child.

ID: Intellectual Disability, CP: Cerebral Palsy, ASD: Autism Spectrum Disorder, HI: Hearing Impairment, VI: Visual Impairment

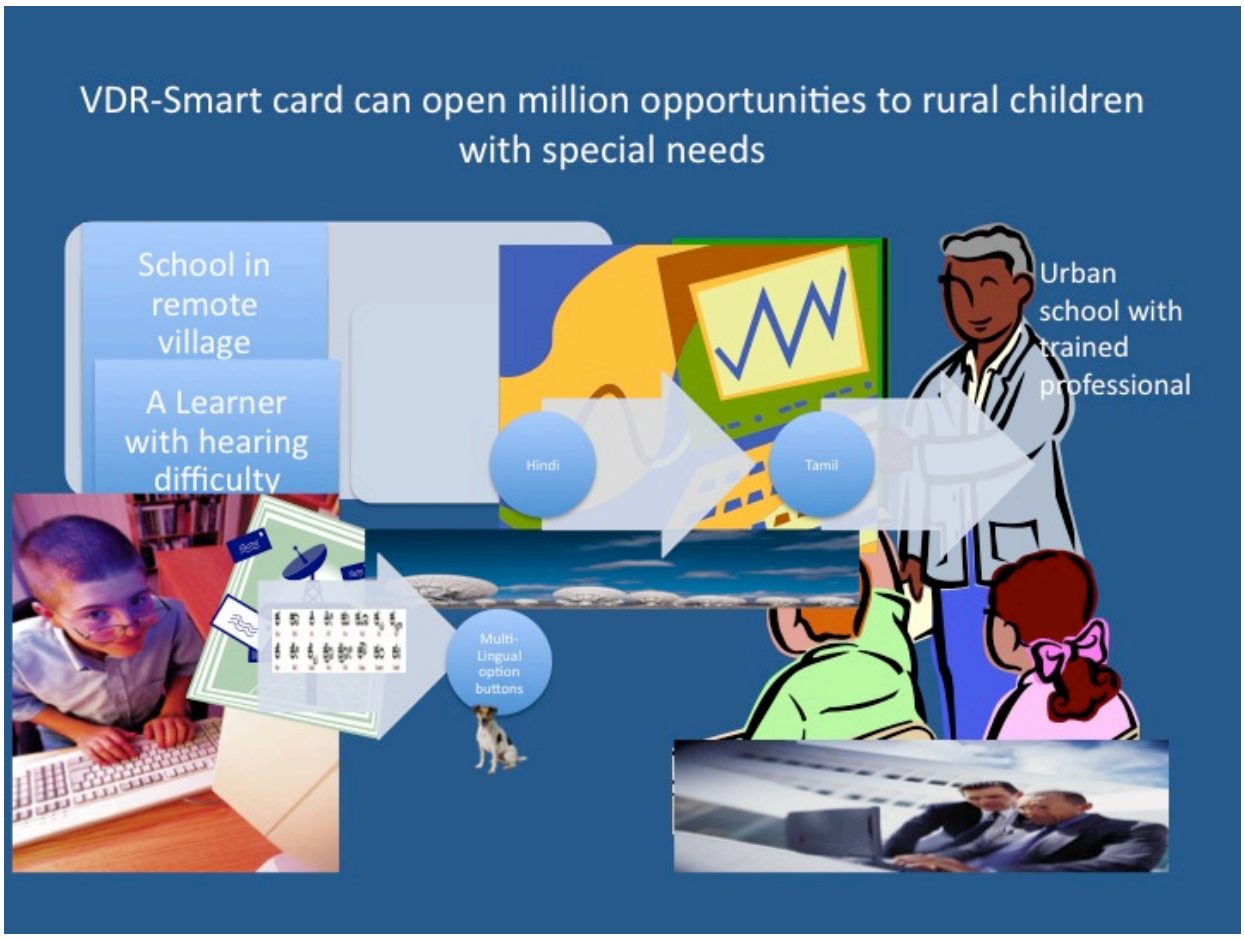
List of Assistive Devices for Visually Impaired Developed by National Institute of Visually Impaired for Primary School Children from 1st to 5th Class

S. No.	Name of the Assistive Device	Indicative Price in Rs.
1.	Interline Braille Slate with two stylus	200/-
2.	Taylor frame with arithmetic types (250 grams) with packing box	150/-
3.	Abacus (Inclusive Design)	60/-
4.	Drawing Board with 20 sheets	300/-
5.	Two Braille scales (6" and 12") (Inclusive Design)	12/-
6.	Puzzles (Inclusive Design)	300/-
7.	Peg Board (Inclusive Design)	200/-
8.	Tactile book of drawings of major monuments shapes of tall trees, types of houses, bridges, dam etc.	500/-
9.	One adapted board game with Dice	1000/-
10.	Auditory balls (2 in nos.)	32/-
11.	Scrabble board (Inclusive Design)	125/-
12.	Small white folding cane (four folds with packing)	80/-
13.	Cubarithem	5000/-
14.	Talking wrist watch	400/-

List of Assistive Devices for Visually Impaired Developed by National Institute of Visually Impaired for Upper Primary School Children from 6th to 8th Class

S. No.	Name of the Assistive Device	Indicative Price in Rs.
1.	Inter point Braille Slate with two stylus (large)	100/-
2.	Interline Braille Slate	200/-
3.	Taylor frames large with Arithmetic Types (250 grams) with packing box	150/-
4.	Taylor frames large with Algebra Types (250 grams) with packing box	150/-
5.	Tactile Geometry Kit with 20 raising sheets	500/-
6.	Drawing Board with 20 raising sheets	150/-
7.	Tactile Draught Board (Inclusive Design)	300/-
8.	Tactile Chess Board (Inclusive Design)	500/-
9.	One accessible board game	1000/-
10.	Tactile diagram set for Science teaching	1500/-
11.	Pocket Frame	45/-
12.	Audio labeller (Inclusive Design)	3000/-
13.	Signature guide with rupee checker and wallet	150/-
14.	Braille wrist watch	1200/-
15.	White folding cane	200/-
16.	Measuring kit (inch tape, needle threaded, small Braille scale, liquid indicator, measuring cup)	200/-
17.	Audio Ball 2 nos.	32/-
18.	Talking Table Clock	600/-

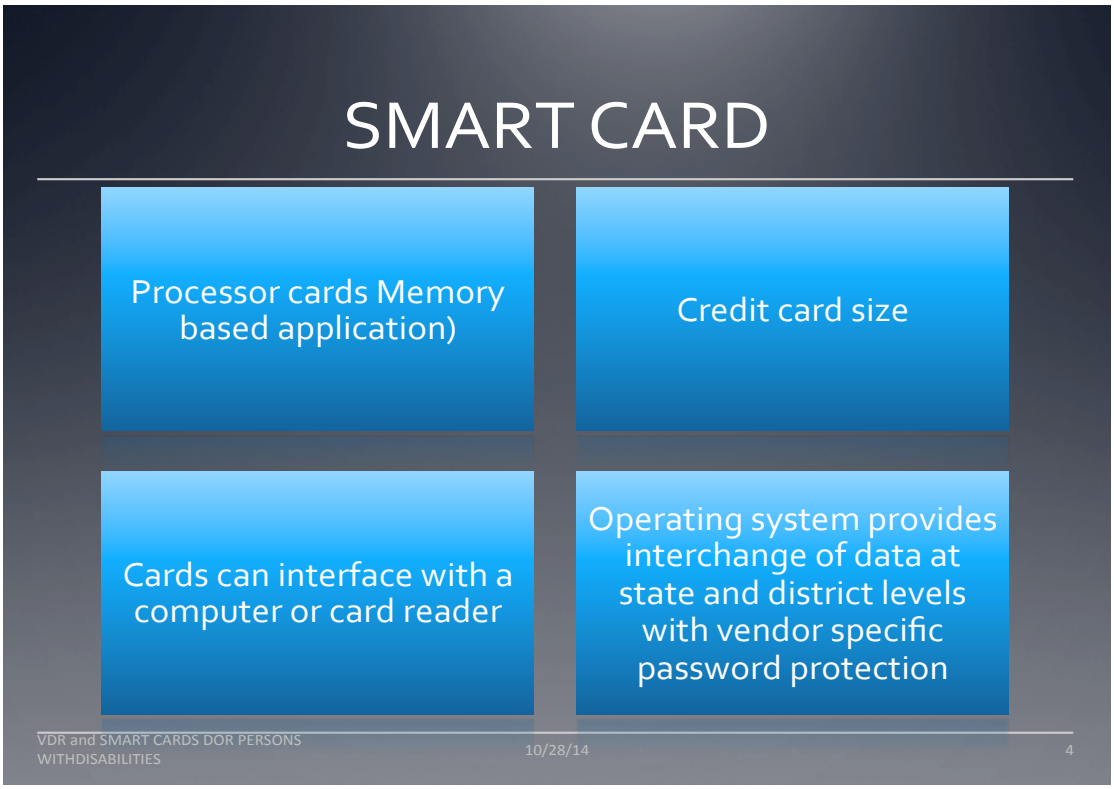
Village disability registers and ID Smart cards for persons with disabilities



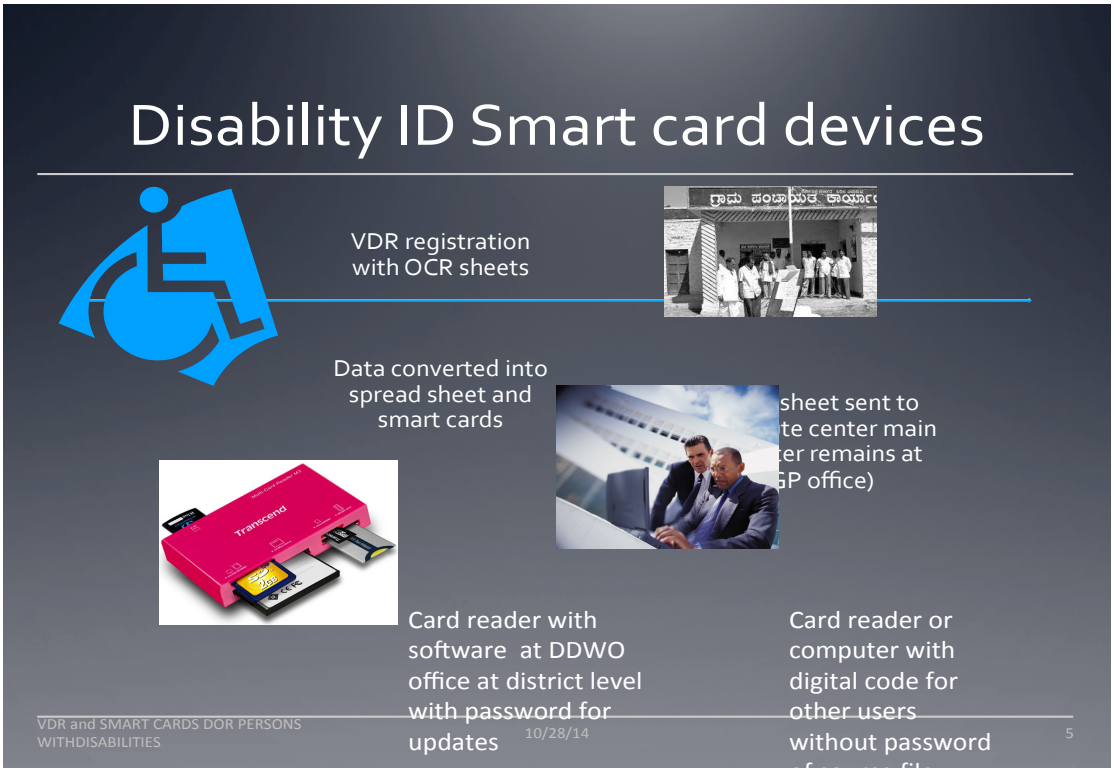
VDR SMART CARD FEATURES

- Visual identity application
- Plastic card use
- Magnetic strip
- Visual data also available in machine readable form
- Decentralized and centralized update of data
- Multi user system of smart cards
- Electro memory card
- Security-vendor specific

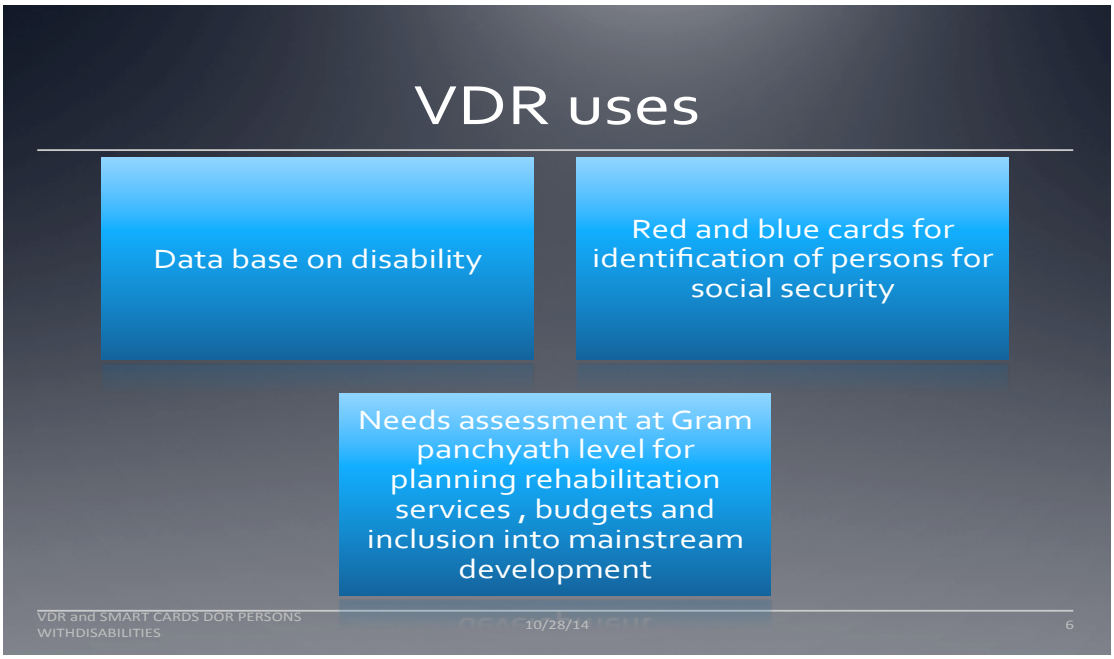
SMART CARD



Disability ID Smart card devices



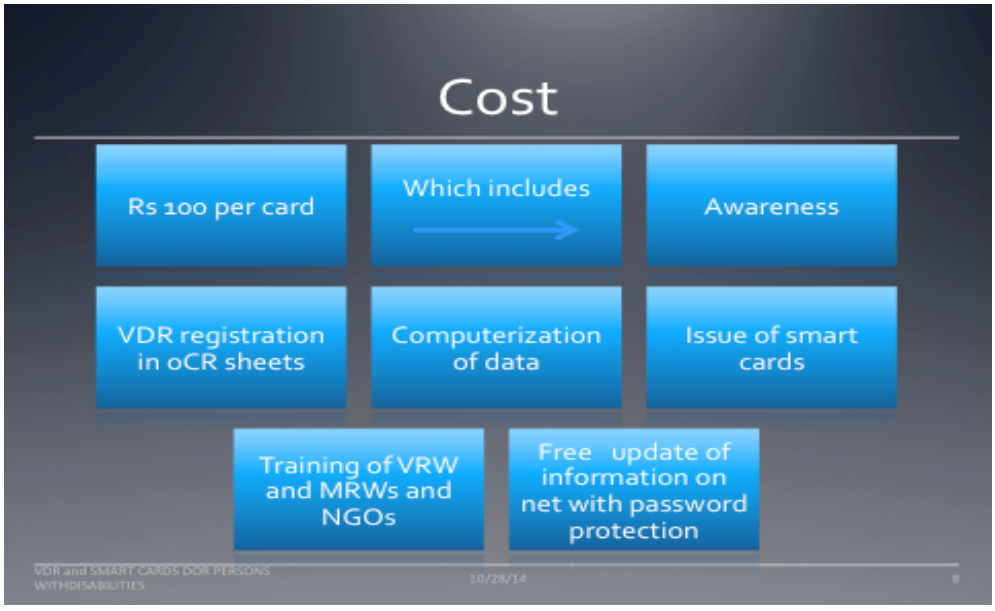
VDR uses



Operating systems and mechanism

- Panchayath-Manuel data registers
- DDWO office-Digital data with analysis and smart card distribution systems
- CBR NETWORK-State wise data with analysis and smart card production
- Storage on a cloud in a dedicated website

Cost



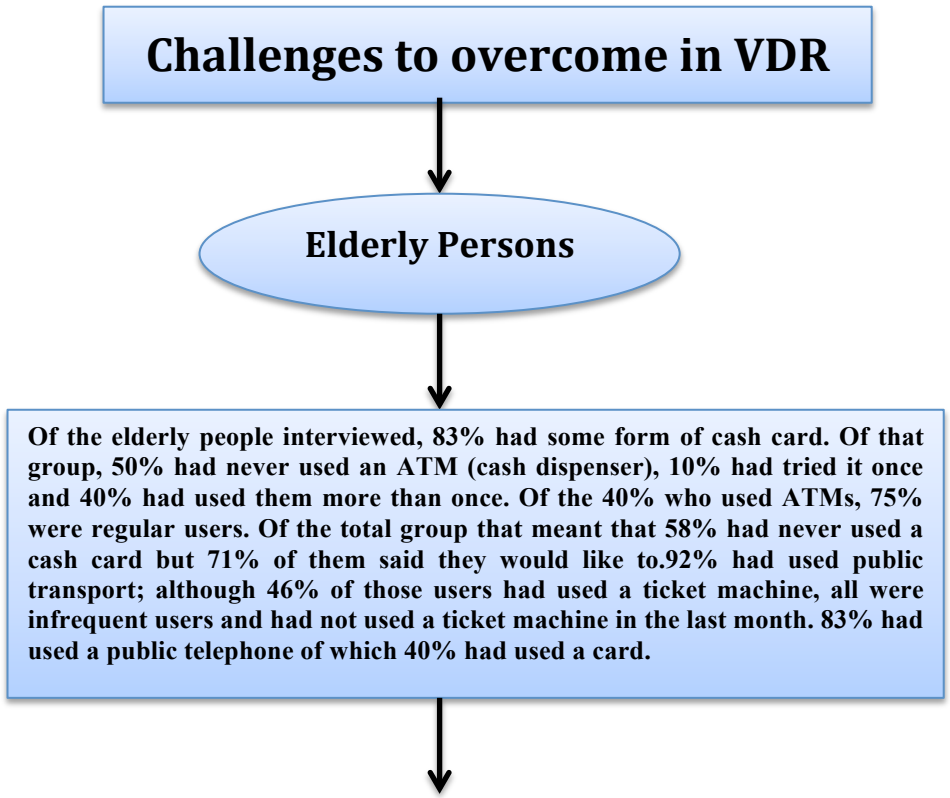
Source of funding

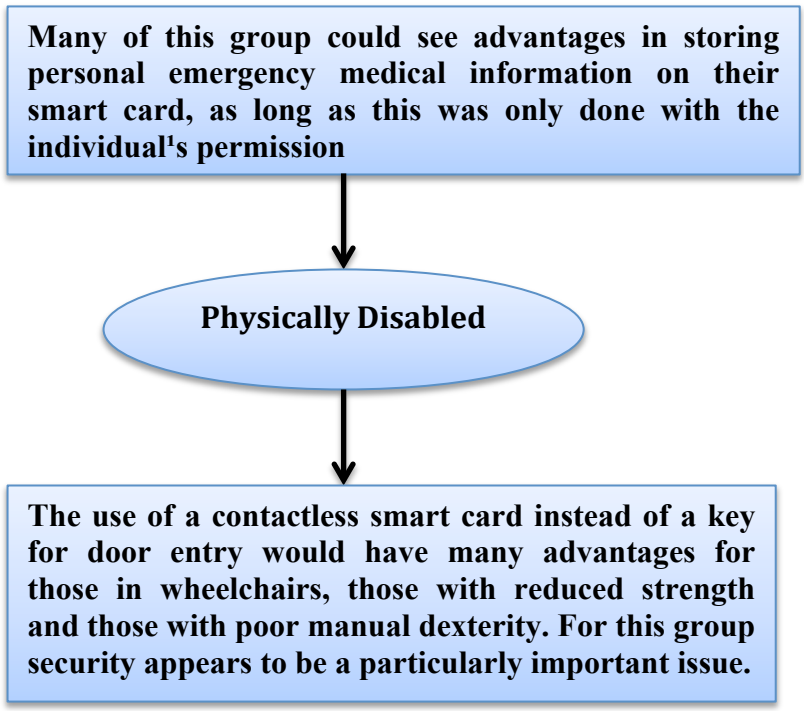
- User of smart card pays Rs 100 per card on the same lines as Senior citizen card
- No financial implication for the government
- Government machinery such as VRWs, MRWs, Panchayth office, DDWO office shall be used during the process
- Since survey and ID card is already a responsibility of VRW and MRW and are paid by the state government there is no need for payment of additional money .Rs 10 is paid to trained volunteers who fill OCR form.
- Rs 10 lakh as a revolving fund to CBR NETWORK for training and public awareness campaigns at district, Taluk and Village panchayth levels-Rs 5000 per block.(186 blocks)

Time frame

- 36 months
- 1st quarter training of MRW, VRW and volunteers
- 2nd Quarter-Public awareness on VDR and smart cards
- 3rd quarter-VDR with ICR registration
- 4th Quarter-Computerization of data base
- 5th quarter-issue of smart cards
- 6th and 7th quarter-Monitoring
- 8th quarter-second round registration for those who were absent
- 9th and 10th Spread sheet data loaded on net
- Data flow on new registration on OCR and net once in a year for updates

Challenges to overcome in VDR



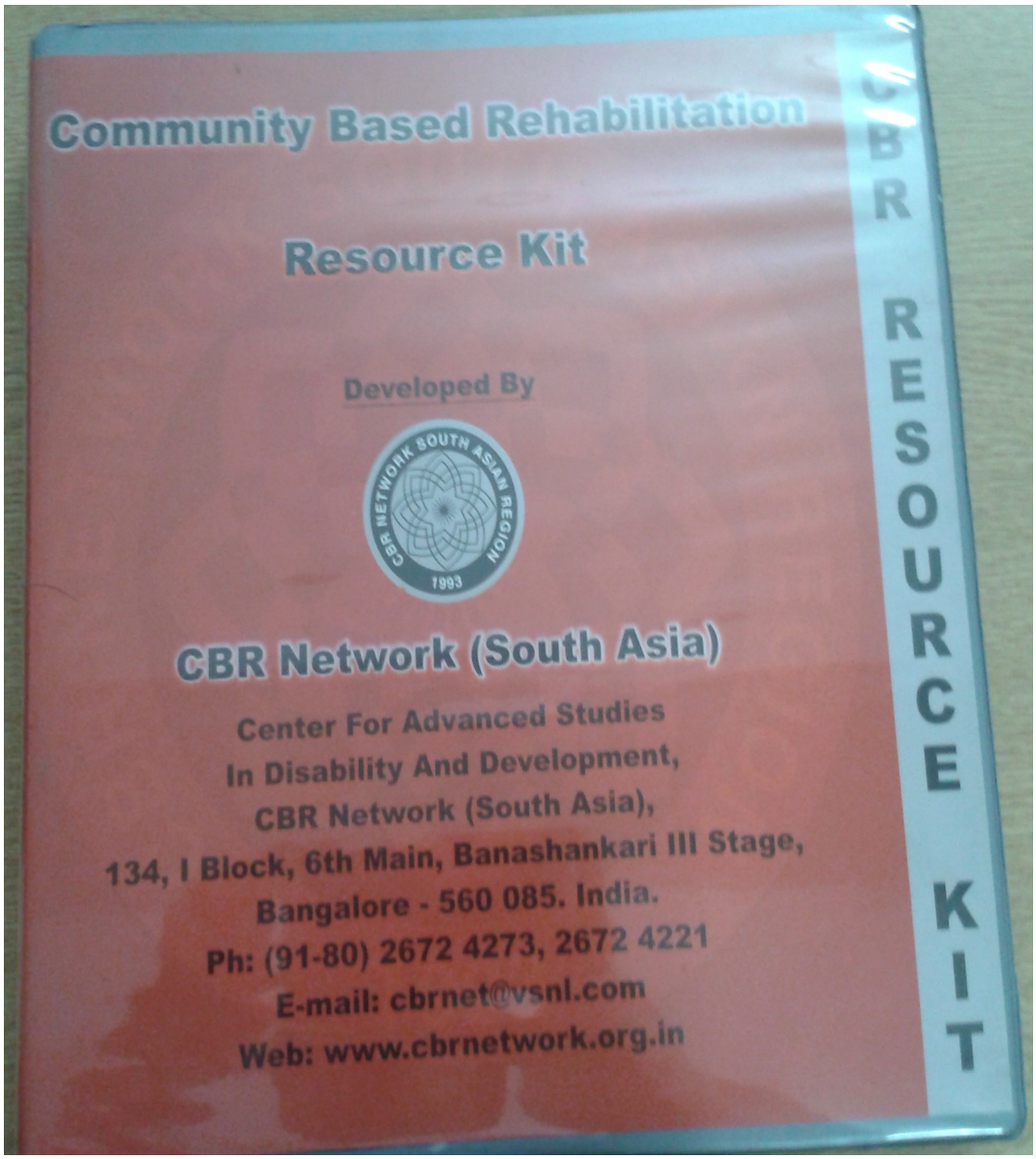


Data management and Card readers –District level

Card readers are made available at the district level in the office r in charge of disability welfare	Training I provided under VDR to officers at district level	Password protection with option o edit data in case of death or additional disability	Parent data with the state level office responsible for disability affairs or in the computer information center set up by the government
Card reading access available to the government departments	Training module is available for inclusion in the existing training programmes	NO PERMISSION FO DATA Editing	
Civil societies/NGOs can also access card readers with permission from the government	Training module is available for inclusion in the existing training programmes	NO PERMISSION FO DATA Editing	

Multi-sensor navigation cane for Indian roads for people developed by PES Institute of technology in collaboration with CBR NETWORK.

Community Based Rehabilitation
Resource Kit on Disability and Rehabilitation



This Community Based Rehabilitation (CBR) Resource Kit contains 52 CD-ROMs well packed in a hardbound folder with virtual lectures, a digital library, CBR software for assessment, and planning tools. The resource kit is a useful tool for students, NGO staff, Community Health centers and PHCs, private medical practitioners, universities, and governments that are working in the disability sector.

These CD-ROMs cover screening, identification, assessment, education, Portage, Inclusive education, training of CBR workers, parents and teachers, mobility aids, rights issues, self-help groups, curriculum based criterion referenced schedules, and other valuable resources.
The kit also contains CBR software's OMAR and Trinetra.

- **The kit is listed by ADBI** ASIAN DEVELOPMENT BANK INSTITUTE, Tokyo, Japan under the publication list.
- **How To Get a Copy? - Cost within India-Rs 5000 including Postage**
- **This kit is meant to assist village communities to learn knowledge, skills and information to enable people with disabilities. Any commercial use of the CBR Resource kit is strictly prohibited.**

References

For more Information

Microsoft Accessibility
Technology for Everyone

Microsoft Accessibility Online
www.microsoft.com/enable/

Microsoft Accessibility Update e-Newsletter
www.microsoft.com/enable/news/subscribe/

Microsoft Corporate Citizenship Online
www.microsoft.com/citizenship

Microsoft Software Developer Network (MSDN) Accessibility
http://msdn.microsoft.com/en-us/windows/bb735024.aspx

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Website links: -

1) http://www.tiresias.org/research/devices/index.htm

2) http://www.kurzweiledu.com/products/kurzweil-3000-firefly-overview.html

3) Dragon - Dragon NaturallySpeaking - Nuance | Nuance

4) www.nuance.com/**dragon**/index.htm

5) http://www.aidis.org/

6) http://www.dlf.org.uk/content/dlf-data